

# SEQUENCE LISTING

a

<110> Murray, Richard  
Glynne, Richard  
Watson, Susan R.  
EOS Biotechnology, Inc.

<120> Novel Methods of Diagnosis of Angiogenesis,  
Compositions and Methods of Screening for Angiogenesis  
Modulators

<130> 018501-000710US

<140> US 09/784,356

<141> 2001-02-14

<150> US 60/148,425

<151> 1999-08-11

<150> US 09/637,977

<151> 2000-08-11

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| cccgggatcg | ccccagcagg  | gatgggagac | aagatctggc | tgccttccc  | cgtgtcctt  | 180  |
| ctggccgctc | tgctccgggt  | gctgctgcct | ggggcgcccg | gcttcacacc | ttccctcgat | 240  |
| agcgacttca | cctttaccct  | tcccgccggc | cagaaggagt | gcttctacca | gcccatgccc | 300  |
| ctgaaggcct | cgctggagat  | cgagtaccaa | gttttagatg | gagcaggatt | agatattgat | 360  |
| ttccatcttg | cctctccaga  | aggcaaaacc | ttagtttttg | aacaaagaaa | atcagatgga | 420  |
| gttcacactg | tagagactga  | agttggtgat | tacatgttct | gctttgacaa | tacattcagc | 480  |
| accatttctg | agaagggtgat | tttctttgaa | ttaatcctgg | ataatatggg | agaacaggca | 540  |
| caagaacaag | aagattggaa  | gaaatatatt | actggcacag | atatattgga | tatgaaactg | 600  |
| gaagacatcc | tggaatccat  | caacagcatc | aagtccagac | taagcaaaag | tgggcacata | 660  |
| caaactctgc | ttagagcatt  | tgaagctcgt | gatcgaaaca | tacaagaaag | caactttgat | 720  |
| agagtcaatt | tctggtctat  | ggttaattta | gtggtcatgg | tggtggtgtc | agccattcaa | 780  |
| gtttatatgc | tgaagagtct  | gtttgaagat | aagaggaaaa | gtagaactta | aaactccaaa | 840  |
| ctagagtacg | taacattgaa  | aaatgaggca | taaaaatgca | ataaactgtt | acagtcaaga | 900  |
| ccattaatgg | tcttctccaa  | aatattttga | gatataaaag | taggaaacag | gtataatttt | 960  |
| aatgtgaaaa | ttaagtcttc  | actttctgtg | caagtaatcc | tgctgatcca | gttgacttta | 1020 |
| agtgtgtaac | aggaatattt  | tgcagaatat | aggtttaact | gaatgaagcc | atattaataa | 1080 |
| ctgcattttc | ctaactttga  | aaaattttgc | aaatgtctta | ggtgatttaa | ataaatgagt | 1140 |
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| aacgcaactt  | cgccctgctt | gagcgaggct | gcggtttccg | aggccctctc | cagccaagga | 120 |

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| ctcgcctcgc  | cctctagcgt  | tcgtctggag  | tagcgccacc  | ccggcttcct  | ggggacacag  | 240  |
| ggttggcacc  | atggggccca  | ccagcgtccc  | gctggtcaag  | gcccaccgca  | gctcggctct  | 300  |
| tgactacgtc  | aactatgata  | tcacgtcccg  | gcattacaac  | tacacgggaa  | agctgaatat  | 360  |
| cagcgcggac  | aaggagaaca  | gcattaaact  | gacctcggtg  | gtgttcattc  | tcactctgtg  | 420  |
| ctttatcatc  | ctggagaaca  | tctttgtctt  | gctgaccatt  | tggaaaacca  | agaaattcca  | 480  |
| ccgacccatg  | tactatttta  | ttggcaatct  | ggccctctca  | gacctgttgg  | caggagtagc  | 540  |
| ctacacagct  | aacctgctct  | tgtctggggc  | caccacctac  | aagctcactc  | ccgcccagtg  | 600  |
| gtttctgcgg  | gaaggaggta  | tgtttctggc  | cctgtcagcc  | tccgtgttca  | gtctcctcgc  | 660  |
| catcgccatt  | gagcgctata  | tcacaatgct  | gaaaatgaaa  | ctccacaacg  | ggagcaataa  | 720  |
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| ctaccacaag  | cactatatcc  | tcttctgcac  | cacggctctc  | actctgcttc  | tgctctccat  | 900  |
| cgtcattctg  | tactgcagaa  | tctactcctt  | ggtcaggact  | cggagccgcc  | gcctgacgtt  | 960  |
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| aattatcgtc  | ctgagcgtct  | tcacgcctg   | ctgggcaccg  | ctcttcaccc  | tgctcctgtc  | 1080 |
| ggatgtgggc  | tgcaagggtga | agacctgtga  | catcctcttc  | agagcggagt  | acttctcgtt  | 1140 |
| gtagctgtg   | ctcaactccg  | gcaccaaccc  | catcatttac  | actctgacca  | acaaggagat  | 1200 |
| gcgtcggggc  | ttcatccgga  | tcattgtcctg | ctgcaagtgc  | ccgagcggag  | actctgctgg  | 1260 |
| caaattcaag  | cgacccatca  | tcgcccgcct  | ggaattcagc  | cgcagcaaat  | cggacaattc  | 1320 |
| ctcccacccc  | cagaaagacg  | aaggggacaa  | cccagagacc  | attatgtctt  | ctggaaacgt  | 1380 |
| caactcttct  | tcctagaact  | ggaagctgtc  | caccacccgg  | aagcgtctct  | tacttggtcg  | 1440 |
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| gctgcaagcc  | agaggggagga | agggggagaa  | tacgaacagc  | ctgggtggtg  | cgggtgttgg  | 1560 |
| tgggtagagt  | tagttcctgt  | gaacaatgca  | ctgggaaggg  | tggagatcag  | gtcccggcct  | 1620 |
| ggaatatata  | ttctaccccc  | ctggagcttt  | gattttgcac  | tgagccaaaag | gtctagcatt  | 1680 |
| gtcaagctcc  | taaaggggtc  | atttggcccc  | tcctcaaaga  | ctaagtgtcc  | catgtgaaag  | 1740 |
| cgtctctttg  | tctggagctt  | tgaggagatg  | ttttccttca  | cttttagttt  | aaacccaagt  | 1800 |
| gagtgtgtgc  | acttctgctt  | cttttagggat | gccctgtaca  | tcccacaccc  | cacctccct   | 1860 |
| tcccttcata  | cccctctca   | acgttctttt  | actttatact  | ttactacct   | gagagttatc  | 1920 |
| agagctgggg  | ttgtggaatg  | atcgatcatc  | tatagcaaat  | aggctatgtt  | gagtacgtag  | 1980 |
| gctgtgggaa  | gatgaagatg  | gtttggagggt | gtaaaacaat  | gtccttcgct  | gaggccaaaag | 2040 |
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| aaggaagccc  | actttatcta  | aatgatatta  | gccaggatcc  | ttggtgtcct  | aggagaaaca  | 2220 |
| gacaagcaaa  | acaaagtga   | aaccgaatgg  | attaactttt  | gcaaaccaag  | ggagatttct  | 2280 |
| tagcaaatga  | gtctaacaaa  | tatgacatcc  | gtctttccca  | cttttggtga  | tgttttatttc | 2340 |
| agaatcttgt  | gtgattcatt  | tcaagcaaca  | acatgttgta  | ttttgttggt  | ttaaaagtac  | 2400 |
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| ggaacgccag  | aactttttaag | tccagctatt  | cattagatag  | taattgaaga  | tatgtataaa  | 2580 |
| tattacaaaag | aataaaaaata | tattactgtc  | tcttttagtat | ggttttcagt  | gcaattaaac  | 2640 |
| cgagagatgt  | cttggtttttt | taaaaagaat  | agtatttaat  | aggtttctga  | cttttgggga  | 2700 |
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| ttctcttctc | cgccatggaa  | ttctgctccg | tgcttttagc  | cctcctgagc | caaagaaaacc | 180 |
| ccagacaaca | gatgcccata  | cgcagcgtat | agcagtaact  | ccccagctcg | gtttctgtgc  | 240 |
| cgtagtttac | agtattttaat | tttatataat | atatattatt  | tattatagca | tttttgatac  | 300 |
| ctcatattct | gtttacacat  | cttgaaaggc | gctcagtagt  | tctcttacta | aacaaccact  | 360 |
| actccagaga | atggcaacgc  | tgattaccag | tactacagct  | gctaccgccg | cttctgggtc  | 420 |
| tttgggtggc | tacctatgga  | tgctcactct | gggcttcatt  | attgcatttg | tcttggcatt  | 480 |
| ctccgtggga | gccaatgatg  | tagcaaatcc | ttttgggtaca | gctgtgggct | cagggtgtagt | 540 |
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| aattgtgatg  | tcttggttcg  | tgtccccact  | gctttctgga  | attatgtctg  | gaattttatt  | 900  |
| cttcctgggt  | cgtgcattca  | tcctccataa  | ggcagatcca  | gttcctaata  | gtttgcgagc  | 960  |
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| agcaccgttg  | ctgggctttg  | acaaaacttc  | tctgtggggt  | accatcctca  | tctcgggtggg | 1080 |
| atgtgcagtt  | ttctgtgccc  | ttatcgtctg  | gttctttgta  | tgtcccagga  | tgaagagaaa  | 1140 |
| aattgaacga  | gaaataaagt  | gtagtccttc  | tgaagcccc   | ttaatggaaa  | aaaagaatag  | 1200 |
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| ctcattcaaa  | cttgagagatt | tggaggaagc  | tccagagaga  | gagaggcttc  | ccagcgtgga  | 1380 |
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| gtatcacacc  | gtgcataagg  | attccggcct  | gtacaaagag  | ctactccata  | aattacatct  | 1560 |
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| gcgaattcga  | atggacagtt  | acaccagtta  | ctgcaatgct  | gtgtctgacc  | ttcactcagc  | 1800 |
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| cctgcagatc  | cttacagcct  | gctttgggtc  | attcgcccat  | gggtggcaatg | acgtaagcaa  | 1980 |
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| tccttctggg  | ctgtgaattc  | ctgtacatat  | ttctctactt  | tttgtatcag  | gcttcaattc  | 2700 |
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| tttgcaagca  | gtttattgac  | tgttattgct  | aagaagaagt  | aagaaagaaa  | aagcctgttg  | 3060 |
| gcaatcttgg  | ttatttcttt  | aagatttctg  | gcagtgtggg  | atggatgaat  | gaagtggaat  | 3120 |
| gtgaactttg  | ggcaagttaa  | atgggacagc  | cttccatggt  | catttgtcta  | cctcttaact  | 3180 |
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| agtctgctct | gcctatcctc | tgagtggggc | agcaaaagag | gaggactcca | acaaggatct | 120 |
| tgcccagcaa | tacctagaaa | agtactacaa | cctcgaaaag | gatgtgaaac | agtttagaag | 180 |
| aaaggacagt | aatctcattg | ttaaaaaat  | ccaaggaatg | cagaagttcc | ttgggttgga | 240 |
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| cgggccacag  | cctggcctcc | ggagccaccc | acaggcctcc | ccgggcggcg | cccacgctcc | 180  |
| taccgcccgg  | acgcgcggat | cctccgcggg | caccgcagcc | acctgctccc | ggcccagagg | 240  |
| cgacgacag   | atgcgtgcg  | cgtcgccgtc | ctcggcgctg | ctgctactgt | tgtcaacgcc | 300  |
| gcegtgtctg  | cgctcgtcgc | cgtcgccgtc | gccgtcgccg | tcgccctccc | agaatgcaac | 360  |
| ccagactact  | acggactcat | ctaacaaaa  | agcaccgact | ccagcatcca | gtgtcaccat | 420  |
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| cagcaccaca  | gagctccaga | ccaaccaccc | caagtgccgt | ttggatgggg | aagggaagaa | 1920 |
| ctggggaggg  | agagtgaact | ccgaggggtg | tcccctccca | atccccccag | ggccttaatt | 1980 |
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| aagtaactg gaatttactg agaaacttgt ttgtaaaaac tatagttaat aattattgca  | 5820 |
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| caaggtaact | ctgctagcta  | agattcacia  | tggtgaaagc | ccttttccta actatgctga 180   |                  |
| ctctggcgct | gggtcaagtca | caggacaccg  | aagaaaccat | cacgtacacg caatgcactg 240   |                  |
| acggatatga | gtgggatcct  | gtgagacagc  | aatgcaaaga | tattgatgaa tgtgacattg 300   |                  |
| tcccagacgc | ttgtaaaggt  | ggaatgaagt  | gtgtcaacca | ctatggagga tacctctgcc 360   |                  |
| ttccgaaaac | agcccagatt  | attgtcaata  | atgaacagcc | tcagcaggaa acacaaccag 420   |                  |
| cagaaggaac | ctcaggggca  | accaccgggg  | ttgtagctgc | cagcagcatg gcaaccagtg 480   |                  |
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| ccaacccttc | ccaccgtatc  | cagtgtgcag  | caggctacga | gcaaagtgaa cacaacgtgt 660   |                  |
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| accaagcaat | gatgatcttc  | tgtggtgctt  | aaggaaactt | actagagctc cactaacagt 1980  |                  |
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| gctcaggga   | gcaggagatc  | acgctgcccc  | cgtctcgtaa  | gaccgaactt  | gtagttgaag  | 1860 |
| ttaagtcaga  | taagctccca  | gaagagatgg  | gcctctcgca  | gggcagcagc  | ggtgacaaaga | 1920 |
| gggctccggg  | agaccaggga  | gagaaataca  | tcgatctgag  | gcattagccc  | cgaatcactt  | 1980 |
| cagctccctt  | ccctgcctgg  | accattccca  | gctccctgct  | cactcttctc  | tcagccaaag  | 2040 |
| cctccaaagg  | gactagagag  | aagcctcctg  | ctccctcac   | ctgcacaccc  | cctttcagag  | 2100 |
| ggccactggg  | ttaggacctg  | aggacctcac  | ttggccctgc  | aagccgcttt  | tcagggacca  | 2160 |
| gtccaccacc  | atctcctcca  | cgttgagtga  | agctcatccc  | aagcaaggag  | ccccagtctc  | 2220 |
| ccgagcgggt  | aggagagttt  | cttgacagaa  | gtgttttttc  | tttacacaca  | ttatggctgt  | 2280 |
| aaatacctgg  | ctcctgccag  | cagctgagct  | gggtagcctc  | tctgagctgg  | tttctgtccc  | 2340 |
| caaaggctgg  | cttccaccat  | ccaggtgcac  | cactgaagtg  | aggacacacc  | ggagccaggc  | 2400 |
| gcctgctcat  | gttgaagtgc  | gctgttcaca  | cccgtccgg   | agagcacccc  | agcggcatcc  | 2460 |
| agaagcagct  | gcagtgttgc  | tgccaccacc  | ctcctgctcg  | cctcttcaaa  | gtctcctgtg  | 2520 |
| acattttttc  | tttggtcaga  | agccaggaa   | tggtgtcatt  | ccttaaaaaga | tacgtgccgg  | 2580 |
| ggccagggtg  | ggtggctcac  | gcctgtaatc  | ccagcacttt  | gggaggccga  | ggcgggcgga  | 2640 |
| tcacaaaagtc | aggacgagac  | catcctggct  | aacacgggtga | aacctgtct   | ctactaaaaa  | 2700 |
| tacaaaaaaa  | aattagctag  | gcgtagtggg  | tggcacctat  | agtcccagct  | actcggaagg  | 2760 |
| ctgaagcagg  | agaatgggtat | gaatccagga  | ggtggagctt  | gcagtgaagc  | gagaccgtgc  | 2820 |
| cactgcactc  | cagcctgggc  | aacacagcga  | gactccgtct  | cgaggaaaaa  | aaaagaaaag  | 2880 |
| acgcgtacct  | gcggtgagga  | agctgggcgc  | tgttttctgag | ttcaggtgaa  | ttagcctcaa  | 2940 |
| tccccgtgtt  | cacttgctcc  | catagccctc  | ttgatggatc  | acgtaaaact  | gaaaggcagc  | 3000 |
| ggggagcaga  | caaagatgag  | gtctacactg  | tccttcctgg  | ggattaaaagc | tatgggtata  | 3060 |
| ttagcaccaa  | acttctacaa  | accaagctca  | gggccccaac  | cctagaaggg  | cccaaatgag  | 3120 |
| agaatgggtac | ttagggatgg  | aaaacggggc  | ctggctagag  | cttcgggtgt  | gtgtgtctgt  | 3180 |
| ctgtgtgtat  | gcatacatat  | gtgtgtatat  | atggttttgt  | cagggtgtgta | aatttgcaaa  | 3240 |
| ttgtttcctt  | tatatatgta  | tgtatatata  | tatatgaaaa  | tatatatata  | tatgaaaaat  | 3300 |
| aaagcttaat  | tgtcccagaa  | aatcatacat  | tgtcttttta  | ttctacatgg  | gtaccacagg  | 3360 |
| aacctggggg  | cctgtgaaac  | tacaacccaa  | aggcacacaa  | aaccgtttcc  | agttggcagc  | 3420 |
| agagatcagg  | ggttacctct  | gcttctgagc  | aaatggctca  | agctctacca  | gagcagacag  | 3480 |
| ctaccctact  | tttcagcagc  | aaaacgtccc  | gtatgacgca  | gcacgaaggg  | cctggcaggc  | 3540 |
| tgttagcagg  | agctatgtcc  | cttccctatcg | tttccgtcca  | ctt         |             | 3583 |

<210> 8  
 <211> 1970  
 <212> DNA  
 <213> Homo sapiens

<400> 8

|             |            |            |             |             |             |      |
|-------------|------------|------------|-------------|-------------|-------------|------|
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| agggcagtat  | gcacagcttt | cctccactgc | tgctgctgct  | gttctgggg   | gtggtgtctc  | 120  |
| acagcttccc  | agcgactcta | gaaacacaag | agcaagatgt  | ggacttagtc  | cagaaatacc  | 180  |
| tggaaaaata  | ctacaacctg | aagaatgatg | ggaggcaagt  | tgaaaagcgg  | agaaatagtg  | 240  |
| gcccagtggt  | tgaaaaattg | aagcaaatgc | aggaattctt  | tgggctgaaa  | gtgactggga  | 300  |
| aaccagatgc  | tgaaaccctg | aaggtgatga | agcagcccag  | atgtggagtg  | cctgatgtgg  | 360  |
| ctcagtttgt  | cctcactgag | gggaaccctc | gctgggagca  | aacacatctg  | acctacagga  | 420  |
| ttgaaaatta  | cacgccagat | ttgccaagag | cagatgtgga  | ccatgccatt  | gagaaagcct  | 480  |
| tccaactctg  | gagtaatgtc | acacctctga | cattcaccaa  | ggtctctgag  | ggtcaagcag  | 540  |
| acatcatgat  | atcttttgtc | aggggagatc | atcgggacaa  | ctctcctttt  | gatggacctg  | 600  |
| gaggaaatct  | tgctcatgct | tttcaaccag | gcccagggtat | tggaggggat  | gctcattttg  | 660  |
| atgaagatga  | aaggtggacc | aacaatttca | gagagtacaa  | cttacatcgt  | gttgcggtctc | 720  |
| atgaactcgg  | ccattctctt | ggactctccc | attctactga  | tatcggggct  | ttgatgtacc  | 780  |
| ctagctacac  | cttcagtggt | gatgttcagc | tagctcagga  | tgacattgat  | ggcatccaag  | 840  |
| ccatatatgg  | acgttcccaa | aatcctgtcc | agcccatcgg  | cccacaaacc  | ccaaaagcat  | 900  |
| gtgacagtaa  | gctaaccttt | gatgctataa | ctacgattcg  | gggagaagtg  | atgttcttta  | 960  |
| aagacagatt  | ctacatgcgc | acaaatccct | tctaccggga  | agttgagctc  | aatttcattt  | 1020 |
| ctgttttctg  | gccacaactg | ccaaatgggc | ttgaagctgc  | ttacgaattt  | gccgacagag  | 1080 |
| atgaagtcgg  | gtttttcaaa | gggaataagt | actgggctgt  | tcagggacag  | aatgtgtctac | 1140 |
| acggataccc  | caaggacatc | tacagctcct | ttggcttccc  | tagaactgtg  | aagcatatcg  | 1200 |
| atgctgctct  | ttctgaggaa | aacactggaa | aaacctactt  | ctttgttgct  | aacaaatact  | 1260 |
| ggagggtatga | tgaatataaa | cgatctatgg | atccagggtta | tcccaaaatg  | atagcacatg  | 1320 |
| actttcctgg  | aattggccac | aaagttagtg | cagttttcat  | gaaagatgga  | tttttctatt  | 1380 |
| tctttcatgg  | aacaagacaa | tacaaatttg | atcctaaaac  | gaagagaatt  | ttgactctcc  | 1440 |
| agaaagctaa  | tagctgggtc | aactgcagga | aaaattgaac  | attactaatt  | tgaatggaaa  | 1500 |
| acacatgggt  | tgagtccaaa | gaaggtgttt | tccatgaaga  | ctgtctattt  | tctcagtcac  | 1560 |
| ttttaacctc  | tagagtcact | gatacacaga | atataatctt  | atttatacct  | cagttttgcat | 1620 |
| atTTTTTTac  | tatttagaat | gtagcccttt | ttgtactgat  | ataatttagt  | tccacaaatg  | 1680 |
| gtgggtacaa  | aaagtcaagt | ttgtggctta | tggattcata  | tagggccagag | ttgcaaagat  | 1740 |
| cttttccaga  | gtatgcaact | ctgacgttga | tcccagagag  | cagcttcagt  | gacaaacata  | 1800 |
| tcctttcaag  | acagaaagag | acaggagaca | tgagtctttg  | ccggaggaaa  | agcagctcaa  | 1860 |
| gaacacatgt  | gcagtcactg | gtgtcaccct | ggataggcaa  | gggataactc  | ttctaacaca  | 1920 |
| aaataagtgt  | tttatgtttg | gaataaagtc | aaccttggtt  | ctactgtttt  |             | 1970 |

<210> 9  
 <211> 1155  
 <212> DNA  
 <213> Homo sapiens

<400> 9

|            |            |             |            |            |             |     |
|------------|------------|-------------|------------|------------|-------------|-----|
| atggattgca | gtaacggatc | ggcagagtgt  | accggagaag | gaggatcaaa | agaggtgggtg | 60  |
| gggactttta | aggctaaaga | cctaatagtc  | acaccagcta | ccatttttaa | ggaaaaacca  | 120 |
| gacccaata  | atctgggttt | tggaaactgtg | ttcacggatc | atatgctgac | ggtggagtgg  | 180 |
| tcctcagagt | ttggatggga | gaaacctcat  | atcaagcctc | ttcagaacct | gtcattgcac  | 240 |
| cctggctcat | cagctttgca | ctatgcagtg  | gaattatttg | aaggattgaa | ggcatttcga  | 300 |
| ggagtagata | ataaaattcg | actgtttcag  | ccaaacctca | acatggatag | aatgtatcgc  | 360 |
| tctgctgtga | gggcaactct | gccggatttt  | gacaaagaag | agctcttaga | gtgtattcaa  | 420 |
| cagcttgtga | aattggatca | agaatgggtc  | ccatattcaa | catctgctag | tctgtatatt  | 480 |
| cgtcctgcat | tcattggaac | tgagccttct  | cttggagtca | agaagcctac | caaagccctg  | 540 |
| ctctttgtac | tcttgagccc | agtgggacct  | tatttttcaa | gtggaacctt | taatccagtg  | 600 |
| tccctgtggg | ccaatcccaa | gtatgtaaga  | gcctggaaag | gtggaactgg | ggactgcaag  | 660 |
| atggggagga | attacggctc | atctcttttt  | gccaatgtg  | aagacgtaga | taatgggtgt  | 720 |
| cagcaggtcc | tgtggctcta | tggcagagac  | catcagatca | ctgaagtggg | aactatgaat  | 780 |
| ctttttcttt | actggataaa | tgaagatgga  | gaagaagaac | tggcaactcc | tccactagat  | 840 |
| ggcatcattc | ttccaggagt | gacaaggcgg  | tgcattctgg | acctggcaca | tcagtggggg  | 900 |

|             |            |            |            |             |            |      |
|-------------|------------|------------|------------|-------------|------------|------|
| gaattttaagg | tgtcagagag | atacctcacc | atggatgact | tgacaacagc  | cctggagggg | 960  |
| aacagagtga  | gagagatggt | tagctctggg | acagcctgtg | ttgtttgccc  | agtttctgat | 1020 |
| atactgtaca  | aaggcgagac | aatacacatt | ccaactatgg | agaatgggtcc | taagctggca | 1080 |
| agccgcatct  | tgagcaaatt | aactgatatc | cagtatggaa | gagaagagag  | cgactggaca | 1140 |
| atttgcttat  | cctga      |            |            |             |            | 1155 |

<210> 10  
 <211> 1837  
 <212> DNA  
 <213> Homo sapiens

|             |            |             |            |             |            |      |
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| ctcaaactca  | gctcacttga | gagtctcttc  | ccgccagctg | tggaaagaac  | tttgcgtctc | 60   |
| tccagcaatg  | catctccttg | cgattctgtt  | ttgtgctctc | tggctctgcag | tggtggccga | 120  |
| gaactcggat  | gattatgatc | tcatgtatgt  | gaatttggac | aacgaaatag  | acaatggact | 180  |
| ccatcccact  | gaggacccca | cgccgtgcga  | ctgcggtcag | gagcactcgg  | aatgggacaa | 240  |
| gctcttcac   | atgctggaga | actcgcagat  | gagagagcgc | atgctgctgc  | aagccacgga | 300  |
| cgacgtcctg  | cggggcgagc | tgcagaggct  | gcgggaggag | ctgggcccgc  | tcgcggaaag | 360  |
| cctggcgagg  | cgtgcgcg   | cgggggctcc  | cgcagaggcc | aggctgacca  | gtgctctgga | 420  |
| cgagctgctg  | caggcgaccc | gcgacgcggg  | ccgcaggctg | gcgcgtatgg  | agggcgcgga | 480  |
| ggcgacgcgc  | ccagaggagg | cggggcgcg   | cctggccgcg | gtgctagagg  | agctgcggca | 540  |
| gacgcgagcc  | gacgtgcacg | cggtgcagg   | ctgggctgcc | cggagctggc  | tgccggcagg | 600  |
| ttgtgaaaca  | gctattttat | tcccaatgcg  | ttccaagaag | atttttggaa  | gcgtgcatcc | 660  |
| agtgaagacca | atgaggcttg | agtcttttag  | tgcttgcatt | tgggtcaaag  | ccacagatgt | 720  |
| attaaacaaa  | accatcctgt | tttcctatgg  | cacaaagagg | aatccatatg  | aaatccagct | 780  |
| gtatctcagc  | taccaatcca | tagtgtttgt  | ggtgggtgga | gaggagaaca  | aactggttgc | 840  |
| tgaagccatg  | gtttccctgg | gaagggtggac | ccacctgtgc | ggcacctgga  | attcagagga | 900  |
| agggctcaca  | tccttggtgg | taaatggtga  | actggcggct | accactgttg  | agatggccac | 960  |
| aggtcacatt  | gttcctgagg | gaggaatcct  | gcagattggc | caagaaaaga  | atggctgctg | 1020 |
| tgtgggtggt  | ggctttgatg | aaacatttag  | cttctctggg | agactcacag  | gcttcaatat | 1080 |
| ctgggatagt  | gttcttagca | atgaagagat  | aagagagacc | ggaggagcag  | agtcttgtca | 1140 |
| catccggggg  | aatattgttg | ggtggggagt  | cacagagatc | cagccacatg  | gaggagctca | 1200 |
| gtatgtttca  | taaatgttgt | gaaactccac  | ttgaagccaa | agaaagaaac  | tcacacttaa | 1260 |
| aacacatgcc  | agttgggaag | gtctgaaaac  | tcagtgcata | ataggaacac  | ttgagactaa | 1320 |
| tgaaagagag  | agttgagacc | aatctttatt  | tgtactggcc | aaatactgaa  | taaacagttg | 1380 |
| aaggaaagac  | attggaaaaa | gcttttgagg  | ataatgttac | tagactttat  | gccatggtgc | 1440 |
| tttcagttta  | atgctgtgtc | tctgtcagat  | aaactctcaa | ataattaaaa  | aggactgtat | 1500 |
| tgttgaacag  | agggacaatt | gttttacttt  | tctttggtta | attttgtttt  | ggccagagat | 1560 |
| gaattttaca  | ttggaagaat | aacaaaataa  | gatttgttgt | ccattgttca  | ttgttattgg | 1620 |
| tatgtacctt  | attacaaaaa | aatgatgaa   | aacatattta | tactacaagg  | tgacttaaca | 1680 |
| actataaatg  | tagtttatgt | gttataatcg  | aatgtcacgt | ttttgagaag  | atagtcatat | 1740 |
| aagttatatt  | gcaaaaggga | tttgtattaa  | tttaagacta | tttttgtaaa  | gctctactgt | 1800 |
| aaataaaaata | ttttataaaa | ctaaaaaaa   | aaaaaaa    |             |            | 1837 |

<210> 11  
 <211> 8923  
 <212> DNA  
 <213> Homo sapiens

|            |            |             |            |            |            |     |
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| <400> 11   |            |             |            |            |            |     |
| agctcacagc | tattgtggtg | ggaaagggag  | ggtggttggg | ggatgtcaca | gcttgggctt | 60  |
| tatctcccc  | agcagtggg  | actccacagc  | ccctgggcta | cataacagca | agacagtccg | 120 |
| gagctgtagc | agacctgatt | gagcctttgc  | agcagctgag | agcatggcct | aggggtggcg | 180 |
| gcaccattgt | ccagcagctg | agtttcccag  | ggaccttgga | gatagccgca | gccctcattt | 240 |
| gcaggggaag | gcaccattgt | ccagcagctg  | agtttcccag | ggaccttgga | gatagccgca | 300 |
| gccctcattt | atgattcctg | ccagattttgc | cggggtgctg | cttgcctctg | ccctcatttt | 360 |
| gccagggacc | ctttgtgcag | aaggaactcg  | cggcaggtca | tccacggccc | gatgcagcct | 420 |
| tttcggaagt | gacttcgtca | acacctttga  | tgggagcatg | tacagctttg | cgggatactg | 480 |
| cagttacctc | ctggcagggg | gctgccagaa  | acgctccttc | tcgattattg | gggacttcca | 540 |
| gaatggcaag | agagtgagcc | tctccgtgta  | tcttggggaa | ttttttgaca | tccatttggt | 600 |
| tgtcaatggg | accgtgacac | agggggacca  | aagagtctcc | atgccctatg | cctccaaagg | 660 |

|             |            |             |             |            |             |      |
|-------------|------------|-------------|-------------|------------|-------------|------|
| gctgtatcta  | gaaactgagg | ctgggtacta  | caagctgtcc  | ggtgaggcct | atggctttgt  | 720  |
| ggccaggatc  | gatggcagcg | gcaactttca  | agtcctgtcg  | tcagacagat | acttcaacaa  | 780  |
| gacctgcggg  | ctgtgtggca | actttaacat  | ctttgtctgaa | gatgacttta | tgaccaaga   | 840  |
| agggaccttg  | acctcggacc | cttatgactt  | tgccaactca  | tgggctctga | gcagtggaga  | 900  |
| acagtgggtg  | gaacgggcat | ctcctcccag  | cagctcatgc  | aacatctcct | ctggggaaat  | 960  |
| gcagaagggc  | ctgtgggagc | agtgccagct  | tctgaagagc  | acctcgggtg | ttgcccgtg   | 1020 |
| ccacctctcg  | gtggaccccg | agccttttgt  | ggccctgtgt  | gagaagactt | tgtgtgagtg  | 1080 |
| tgtggggggg  | ctggagtgcg | cctgccctgc  | cctcctggag  | tacgcccgga | cctgtgcca   | 1140 |
| ggagggaatg  | gtgctgtacg | gctggaccga  | ccacagcgcg  | tgcagcccag | tgtgccctgc  | 1200 |
| tggtatggag  | tataggcagt | gtgtgtcccc  | ttgcccagg   | acctgccaga | gcctgcacat  | 1260 |
| caatgaaatg  | tgtcaggagc | gatgctgtga  | tggctgcagc  | tgccctgagg | gacagctcct  | 1320 |
| ggatgaaggc  | ctctgcgtgg | agagcaccga  | gtgtccctgc  | gtgcattccg | gaaagcgcta  | 1380 |
| ccctcccggc  | acctccctct | ctcgagactg  | caacacctgc  | atttgccgaa | acagccagtg  | 1440 |
| gatctgcagc  | aatgaagaat | gtccagggga  | gtgccttgtc  | actggtcaat | cccacttcaa  | 1500 |
| gagctttgac  | aacagatact | tcaccttcag  | tgggatctgc  | cagtacctgc | tggcccggga  | 1560 |
| ttgccaggac  | cactccttct | ccattgtcat  | tgagactgtc  | cagtgtgctg | atgaccgcga  | 1620 |
| cgctgtgtgc  | acccgctccg | tcaccgtccg  | gctgcctggc  | ctgcacaaca | gccttgtgaa  | 1680 |
| actgaagcat  | ggggcaggag | ttgccatgga  | tggccaggac  | atccagctcc | ccctcctgaa  | 1740 |
| aggtgacctc  | cgcatccagc | atacagtgc   | ggcctccgtg  | cgctcagct  | acggggagga  | 1800 |
| cctgcagatg  | gactgggatg | gccgcgggag  | gctgtgtgtg  | aagctgtccc | ccgtctagc   | 1860 |
| cggaagacc   | tgcggcctgt | gtgggaatta  | caattggcaac | cagggcgacg | acttccttac  | 1920 |
| ccctctctgg  | ctggcagagc | cccgggtgga  | ggacttcggg  | aacgcctgga | agctgcacgg  | 1980 |
| ggactgccag  | gacctgcaga | agcagcacag  | cgatccctgc  | gccctcaacc | cgcgcatgac  | 2040 |
| caggttctcc  | gaggaggcgt | gcgcggtcct  | gacgtccccc  | acattcgagg | cctgccatcg  | 2100 |
| tgcctgcagc  | ccgctgccc  | acctgcggaa  | ctgcctgtac  | gacgtgtgct | cctgctcgga  | 2160 |
| cgccgcgag   | tgcctgtgcg | gcgccttgcc  | cagctatgcc  | gcggcctgcg | cggggagagg  | 2220 |
| cgtgcgcgtc  | gcgtggcgcg | agccaggccg  | ctgtgagctg  | aactgcccga | aaggccaggt  | 2280 |
| gtacctgcag  | tgcgggaccc | cctgcaacct  | gacctgccgc  | tctctctctt | acccggatga  | 2340 |
| ggaatgcaat  | gaggcctgcc | tggagggtcg  | cttctgcccc  | ccagggtctt | acatggatga  | 2400 |
| gaggggggac  | tgcgtgcccc | aggcccagtg  | cccctgttac  | tatgacggtg | agatcttcca  | 2460 |
| gccagaagac  | atcttctcag | accatcacac  | catgtgtctac | tgtgaggatg | gcttcatgca  | 2520 |
| ctgtaccatg  | agtggagtcc | ccggaagctt  | gctgcctgac  | gctgtctca  | gcagtcccct  | 2580 |
| gtctcatcgc  | agcaaaagga | gcctatcctg  | ctggcccccc  | atggtcaagc | tgggtgtctc  | 2640 |
| cgctgacaac  | ctgcgggctg | aagggtctga  | gtgtaccaaa  | acgtgccaga | actatgacct  | 2700 |
| ggagtgcattg | agcatgggct | gtgtctctgg  | ctgcctctgc  | ccccgggca  | tgggtccggca | 2760 |
| tgagaacaga  | tgtgtggccc | tggaaagggtg | tccctgcttc  | catcagggca | aggagtatgc  | 2820 |
| ccctggagaa  | acagtgaaga | ttggctgcaa  | cacttgtgtc  | tgtcgggacc | ggaagtggaa  | 2880 |
| ctgcacagac  | catgtgtgtg | atgccacgtg  | ctccacgac   | ggcatggccc | actacctcac  | 2940 |
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| ctgcggcagt  | aaccttgga  | cctttcggat  | cctagtgggg  | aataagggat | gcagccaccc  | 3060 |
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&lt;211&gt; 6816

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 12

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| gagggccgcc | gatgtcaagt | acatcttctt | gatgacagga  | agctggaact | cctagtacag  | 480  |
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| ctccttccat  | aaatttttca  | aaataactaa  | tcaacaaaga  | aaaagctctt  | tttttcccta | 7320 |
| aaataaactc  | aaattttatcc | ttgttttagag | cagagaaaaa  | ttaagaaaaa  | ctttgaaatg | 7380 |
| gtotcaaaaa  | attgctaaat  | attttcaatg  | gaaaaactaaa | tgtagtttta  | gctgattgta | 7440 |
| tgggggttttc | gaacctttca  | ctttttgttt  | gttttaccta  | tttcacaact  | gtgtaaattg | 7500 |
| ccaataatc   | ctgtccatga  | aaatgcaa    | tatccagtgt  | agatatattt  | gaccatcacc | 7560 |
| ctatggatat  | tggctagttt  | tgcctttatt  | aagcaaattc  | atttcagcct  | gaatgtctgc | 7620 |
| ctatatattc  | tctgctcttt  | gtattctcct  | ttgaaccctg  | taaaacatcc  | tgtggcactc | 7680 |

<210> 17  
 <211> 1418  
 <212> DNA  
 <213> Homo sapiens

<400> 17

|            |             |            |             |            |             |      |
|------------|-------------|------------|-------------|------------|-------------|------|
| aactgtgcga | accagaccgc  | gcagccttgc | tcagttcagc  | atagcggagc | ggatccgac   | 60   |
| ggatcggagc | acaccggagc  | aggctcatgc | agaaggcgtc  | tgcgagacca | tggagaacgg  | 120  |
| atacacctat | gaagattata  | agaacactgc | agaatggctt  | ctgtctcata | ctaagcaccg  | 180  |
| acctcaagtt | gcaataatct  | gtggttctgg | attaggaggt  | ctgactgata | aattaactca  | 240  |
| ggcccagatc | tttgactaca  | gtgaaatccc | caactttcct  | cgaagtacag | tgccagggtca | 300  |
| tgtgtggcga | ctgggtgttg  | ggttcctgaa | tggcagggcc  | tgtgtgatga | tgcagggcag  | 360  |
| gttccacatg | tatgaagggt  | acccactctg | gaagggtgaca | ttcccagtga | gggttttcca  | 420  |
| ccttctgggt | gtggacaccc  | tggtagtcac | caatgcagca  | ggagggtgta | accccaagtt  | 480  |
| tgagggttga | gatatcatgc  | tgatccgtga | ccatatcaac  | ctacctgggt | tcagtgggtca | 540  |
| gaacctctc  | agagggccca  | atgatgaaag | gtttggagat  | cgtttccctg | ccatgtctga  | 600  |
| tgcctacgac | cggactatga  | ggcagagggc | tctcagtacc  | tggaaacaaa | tgggggagca  | 660  |
| acgtgagcta | caggaaggca  | cctatgtgat | gggtggcaggc | cccagctttg | agactgtggc  | 720  |
| agaatgtcgt | gtgctgcaga  | agctgggagc | agacgctgtt  | ggcatgagta | cagtaccaga  | 780  |
| agttatcgtt | gcacggcact  | gtggacttcg | agtccttggc  | ttctcactca | tcactaacaa  | 840  |
| ggtcatcatg | gattatgaaa  | gcctggagaa | ggccaacctt  | gaagaagtct | tagcagctgg  | 900  |
| caaacaagct | gcacagaaat  | tgaacagatt | tgtctccatt  | cttatggcca | gcattccact  | 960  |
| ccctgacaaa | gccagttgac  | ctgccttggg | gtcgtctggc  | atctcccaca | caagacccaa  | 1020 |
| gtagctgcta | ccttcttttg  | ccccttgcgt | gagtcagtgt  | cctctgtcct | taggtttag   | 1080 |
| cagaaaggaa | aagattcctg  | tccttcacct | ttcccacttt  | cttctaccag | acccttctgg  | 1140 |
| tgccagatcc | tcttctcaaa  | gctgggatta | caggtgtgag  | catagtgaga | ccttggcgct  | 1200 |
| acaaaataaa | gctgtttctca | ttcctgttct | ttcttacaca  | agagctggag | cccgtgccct  | 1260 |

|            |            |            |            |            |            |      |
|------------|------------|------------|------------|------------|------------|------|
| accacacatc | tgtggagatg | cccaggattt | gactcggggc | ttagaacttt | gcatagcagc | 1320 |
| tgctactagc | tctttgagat | aatacattcc | gaggggctca | gttctgcctt | atctaaatca | 1380 |
| ccagagacca | aacaaggact | aatccaatac | ctcttggg   |            |            | 1418 |

<210> 18  
 <211> 1500  
 <212> DNA  
 <213> Homo sapiens

|             |            |             |             |             |             |      |
|-------------|------------|-------------|-------------|-------------|-------------|------|
| <400> 18    |            |             |             |             |             |      |
| aaagtctcgc  | ccaaactttg | ttcggcacaa  | ccagcgccga  | ggggggcgcg  | caggccaggt  | 60   |
| gggagggggc  | ccgcagcggg | cggccgtacc  | ttcgcaaacg  | cccgttctgt  | actcgggtgag | 120  |
| ggagtcgcca  | ttgagcgggg | ggcggatgac  | acaacgcagc  | ccccggtcgc  | aggttccgta  | 180  |
| aatcccgaag  | gtgccgcgc  | agctctcgtt  | cctctggctg  | gcgcacgtgt  | agcagcagcc  | 240  |
| gcagacgccc  | tgcacgatgc | tccccgggca  | gttctctggg  | tcctcgcaact | tggactcgtc  | 300  |
| acagggcagg  | cagaccagcg | cccgggtgcc  | ggagcgcgcc  | agcagcagca  | gcagccccag  | 360  |
| cagcgagacc  | aggaggtgcc | cgcagccggc  | caacccccctg | tccccgcga   | ccaagtacat  | 420  |
| cctcctgcgc  | cgcgcgcgc  | tcctcctcgc  | agccggggcg  | ggagcggggc  | gggcgccttc  | 480  |
| ccctgcgcgc  | ggcacacgcg | ccgcgcgcgc  | cgcaccagca  | gcccgcggtc  | ctcaccgccc  | 540  |
| ctctcggggc  | ccccggggcg | cgcctccccct | cgcggggcga  | ggccccgcgc  | ccttctgcgg  | 600  |
| gccgcgcgca  | ccccgagccc | acgagccttg  | gcgcggcgcg  | cagcttcccc  | tcctcctcct  | 660  |
| cctcctcctc  | ccgggaggga | gggggaaaaa  | agaaaaaagt  | ttctctcccg  | cagctccggt  | 720  |
| tcaacccaaa  | cttctggcgc | ggcggcgggc  | gtggctgctg  | cgtctggctc  | cagcccgggc  | 780  |
| cggcggcgc   | tcctccctct | cctcctccga  | gtcggccggc  | cccgcagcgg  | cgcagcctcc  | 840  |
| gggcgggtcc  | ccgcctcccc | agctgccgag  | tgggcgcggg  | ggcgcagcac  | aagatccgcg  | 900  |
| gcgtccgctc  | cgcgcgcgcc | gctcgcctca  | ctcctgcgcc  | gctcctccgg  | gcgcttggtt  | 960  |
| atggctggag  | cctcagccgc | tcgggtgctg  | ccctccccc   | tcctacctcc  | tcctccagac  | 1020 |
| cttcccccca  | ccccacgcgc | ccgcgcgcgc  | ctcattgggt  | gccccccctc  | cccggccccg  | 1080 |
| ccggccccct  | ccgcctcccc | ctccccctct  | cgggcggccg  | ggcccttctc  | ccctccctca  | 1140 |
| cacgcctcca  | cctcttcccc | atctcctcct  | ccccgagccc  | ggcgcaccga  | gcccggccgtg | 1200 |
| ccaccgagct  | gcggctctgg | ccccggcgcc  | gcgggtgctg  | tgcggatggg  | cttggggcgc  | 1260 |
| accagcgag   | cagcgagagt | cgcggtgtcc  | cgggcgcctc  | ctggcaccgt  | ggccgcagcg  | 1320 |
| gccggcctgg  | gagccaggag | ggcgaggcgg  | ctgcaccttc  | ggggccagat  | tggagtccga  | 1380 |
| agagtggcgg  | gtaccccgag | agctcggggc  | cggggcgatg  | gctgcagcct  | cgggagggta  | 1440 |
| tcgcccggatc | gaactccggg | aaagggaagc  | aaaggcatgg  | aacctccgca  | cactggatga  | 1500 |

<210> 19  
 <211> 1530  
 <212> DNA  
 <213> Homo sapiens

|             |             |             |            |            |             |      |
|-------------|-------------|-------------|------------|------------|-------------|------|
| <400> 19    |             |             |            |            |             |      |
| atgcccccg   | aacagcatca  | tcagcccaac  | aaagtctcgc | ccaaactttg | ttcggcacaa  | 60   |
| ccagcgccga  | gggggcggcg  | caggccaggt  | gggagggggc | ccgcagcggg | cggccgtacc  | 120  |
| ttcgcaaacg  | cccgttctgt  | actcgggtgag | ggagtcgcca | ttgagcgggg | ggcggatgac  | 180  |
| acaacgcagc  | ccccggtcgc  | aggttccgta  | aatcccgaag | gtgccgcgc  | agctctcgtt  | 240  |
| cctctggctg  | gcgcacgtgt  | agcagcagcc  | gcagacgccc | tgcacgatgc | tccccgggca  | 300  |
| gttctctggg  | tcctcgcaact | tggactcgtc  | acagggcagg | cagaccagcg | cccgggtgcc  | 360  |
| ggagcgcgcc  | agcagcagca  | gcagccccag  | cagcgagacc | aggaggtgcc | cgcagccggc  | 420  |
| caacccccctg | tccccgcga   | ccaagtacat  | cctcctgcgc | cgcgcgcgc  | tcctcctcgc  | 480  |
| agccggggcg  | ggagcggggc  | gggcgccttc  | ccctgcgcgc | ggcacacgcg | ccgcgcgcgc  | 540  |
| cgcaccagca  | gcccgcggtc  | ctcaccgccc  | ctctcggggc | ccccggggcg | cgcctccccct | 600  |
| cgcggggcga  | ggccccgcgc  | ccttctgcgg  | gccgcgcgca | ccccgagccc | acgagccttg  | 660  |
| gcgcggcgcg  | cagcttcccc  | tcctcctcct  | cctcctcctc | ccgggaggga | gggggaaaaa  | 720  |
| agaaaaaagt  | ttctctcccg  | cagctccggg  | tcaacccaaa | cttctggcgc | ggcgccggcg  | 780  |
| gtggctgctg  | cgtcgggttc  | cagccccggc  | cgcgcgcgc  | tcctccctct | cctcctccga  | 840  |
| gtcggcggcg  | cccgagcggg  | cgcagcctcc  | gggcgggtcc | ccgcctcccc | agctgcgcag  | 900  |
| tgggcgggtg  | ggcgcagcac  | aagatccgcg  | gcgtccgctc | cgcgcgcgcc | gctcgcctca  | 960  |
| ctcctgcgc   | gctcctccgg  | gcgcttggtt  | atggctggag | cctcagccgc | tcgggtgctg  | 1020 |
| ccctccccc   | tcctacctcc  | tccccagac   | cttcccccca | ccccacgcgc | ccgcgcgcgc  | 1080 |
| ctcattgggt  | gccccccctc  | cccggccccg  | ccggccccct | ccgcctcccc | ctccccctct  | 1140 |

|            |            |            |            |            |            |      |
|------------|------------|------------|------------|------------|------------|------|
| cgggcgccg  | ggcccttct  | cctccctca  | cacgcctcca | cctcttccc  | atctcctcct | 1200 |
| ccccgagcc  | ggcgaccga  | gccggcgtg  | ccaccgagct | gcggctctg  | ccccggcgcc | 1260 |
| gcgggtgcg  | tgcggatgg  | cttggggcg  | accagcgag  | cagcgagagt | cgcggtgtcc | 1320 |
| cgggcgctcg | ctggcaccgt | ggccgcagcg | gccggcctgg | gagccaggag | ggcgaggcgg | 1380 |
| ctgcaccttc | ggggccagat | tggagtctga | agagtggcgg | gtaccccaga | agctcggggc | 1440 |
| cggggcgatg | gctgcagcct | cgggagggtg | tcgccggatc | gaactccggg | aaagggaagc | 1500 |
| aaaggcatgg | aacctccgca | cactggatga |            |            |            | 1530 |

<210> 20  
 <211> 2935  
 <212> DNA  
 <213> Homo sapiens  
  
 <220>  
 <221> modified\_base  
 <222> (1528)  
 <223> n = g, a, c or t

|            |             |            |             |             |             |      |
|------------|-------------|------------|-------------|-------------|-------------|------|
| <400> 20   |             |            |             |             |             |      |
| atgaaaacag | ccgcactcac  | tccgccgcgc | tctccgccac  | cgccaccact  | gcggccaccg  | 60   |
| ccaatgaaac | gcctcccgt   | cctagtgggt | ttttccactt  | tggtgaattg  | ttcctatact  | 120  |
| caaaattgca | ccaagacacc  | ttgtctccca | aatgcaaaat  | gtgaaatacg  | caatggaatt  | 180  |
| gaagcctgct | attgcaacat  | gggattttca | ggaaatgggt  | tcacaatttg  | tgaagatgat  | 240  |
| aatgaatgtg | gaaatttaac  | tcagtctctg | ggcgaaaatg  | ctaattgcac  | taacacagaa  | 300  |
| ggaagtattt | attgtatgtg  | tgtacctggc | ttcagatcca  | gcagtaacca  | agacagggtt  | 360  |
| atcactaatg | atggaaccgt  | ctgtatagaa | aatgtgaatg  | caaactgcc   | tttagataat  | 420  |
| gtctgtatag | ctgcaaatat  | taataaaact | ttaacaaaaa  | tcagatccat  | aaaagaacct  | 480  |
| gtggctttgc | tacaagaagt  | ctatagaaat | tctgtgacag  | atctttcacc  | aacagatata  | 540  |
| attacatata | tagaaatatt  | agctgaatca | tcttcattac  | taggttacaa  | gaacaacact  | 600  |
| atctcagcca | aggacaccct  | ttctaactca | actcttactg  | aatttgtaaa  | aaccgtgaat  | 660  |
| aattttgttc | aaagggatag  | atgtgtagtt | tgggacaagt  | tatctgtgaa  | tcataaggaga | 720  |
| acacacttta | caaaactcat  | gcacactgtt | gaacaaggta  | ctttaaggat  | atcccagagc  | 780  |
| ttccaaaaga | ccacagagtt  | tgatacaaat | tcaacggata  | tagctctcaa  | agttttcttt  | 840  |
| tttgattcat | ataacatgaa  | acatattcat | cctcatatga  | atatggatgg  | agactacata  | 900  |
| aatatatatt | caaagagaaa  | agctgcatat | gattcaaatg  | gcaatgttgc  | agttgcattt  | 960  |
| ttatatata  | agagtattgg  | tcctttgctt | tcatactctg  | acaacttctt  | attgaaacct  | 1020 |
| caaaattatg | ataattctga  | agaggaggaa | agagtcatat  | cttcagtaat  | ttcagttctca | 1080 |
| atgagctcaa | acccaccac   | attatatgaa | cttgaaaaaa  | taacatttac  | attaagtcac  | 1140 |
| cgaaagggtc | cagataggta  | taggagttca | tgtgcatttt  | ggaattactc  | acctgatacc  | 1200 |
| atgaatggca | gctggctctc  | agagggtctg | gagctgacat  | actcaaatga  | gacccacacc  | 1260 |
| tcattgccgt | gtaatcacct  | gacacatttt | gcaattttga  | tgctctctgg  | tccttccatt  | 1320 |
| ggtattaaag | attataatat  | tcttacaagg | atcactcaac  | taggaataat  | tatttctactg | 1380 |
| atgtgtcttg | ccatatgcat  | ttttaccttc | tggttcttca  | gtgaaattca  | aagcaccagg  | 1440 |
| acaacaattc | caaaaaatct  | ttgctgtagc | ctatttcttg  | ctgaacttgt  | ttttcttgtt  | 1500 |
| gggatcaata | caaatactaa  | taagctcntt | tctgtttcaa  | tcattgccgg  | actgctacac  | 1560 |
| tacttctttt | tagctgcttt  | tgcatggatg | tgcatggaag  | gcatacatct  | ctatctcatt  | 1620 |
| gttgtgggtg | tcatactaaa  | caagggtatt | ttgcacaaga  | atttttatat  | ctttggctat  | 1680 |
| ctaagcccag | ccgtggtagt  | tggattttcg | gcagcactag  | gatacagata  | ttatggcaca  | 1740 |
| acaaaagtat | gttggtctag  | caccgaaaca | cactttattt  | ggagttttat  | aggaccagca  | 1800 |
| tgcctaatac | ttcttgtaa   | tctcttggtc | tttgaggatc  | tcataataca  | agtttttctg  | 1860 |
| cactctgcag | ggttgaaacc  | agaagttagt | tgctttgaga  | acataagggtc | ttgtgcaaga  | 1920 |
| ggagccctcg | ctcttctgtt  | ccttctcggc | accacctgga  | tctttggggg  | tctccatgtt  | 1980 |
| gtgcacgcac | cagtgggttac | agcttacctc | ttcacagtca  | gcaatgcttt  | ccaggggatg  | 2040 |
| ttcatttttt | tattcctgtg  | tgttttatct | agaaagattc  | aagaagaata  | ttacagattg  | 2100 |
| ttcaaaaatg | tccctgtgtg  | ttttggatgt | tttaaggtaaa | catagagaat  | gggtggataat | 2160 |
| tacaactgca | ctaaaaataa  | aaattccaag | ctgtggatga  | ccaatgtata  | aaaatgactc  | 2220 |
| atcaaatatt | ccaattatta  | actactagac | aaaaagttat  | ttaaatcagt  | ttttctgttt  | 2280 |
| atgctatagg | aactgtagat  | aataaggtaa | aattatgtat  | catatagata  | tactatgttt  | 2340 |
| ttctatgtga | aatagttctg  | tcaaaaatag | tattgcagat  | atgtggaaaag | taattgggtt  | 2400 |
| ctcaggagtg | atatactctg  | acccaaggaa | agattttctt  | tctaacacga  | gaagtatatg  | 2460 |
| aatgtcctga | aggaaaccac  | tggcttgata | tttctgtgac  | tcgtgttgcc  | tttgaaacta  | 2520 |

|             |             |             |             |             |             |      |
|-------------|-------------|-------------|-------------|-------------|-------------|------|
| gtccccctacc | acctcggtaa  | tgagctccat  | tacagaaagt  | ggaacataag  | agaatgaagg  | 2580 |
| ggcagaatat  | caaacagtga  | aaagggaatg  | ataagatgta  | ttttgaatga  | actgtttttt  | 2640 |
| ctgtagacta  | gctgagaaat  | tgttgacata  | aaataaagaa  | ttgaagaaac  | acatttttacc | 2700 |
| atthttgtgaa | ttgtttctgaa | cttaaattgtc | cactaaaaaca | acttagactt  | ctgttttgcta | 2760 |
| aatctgtttc  | ttttttcta   | attctaaaaa  | aaaaaaaaaag | gtttmccycc  | caaattgaaa  | 2820 |
| aaaaaaggga  | aaaaaaaaatc | tgthttctaag | gttagactga  | gatataatact | atttccttac  | 2880 |
| ttattttcaca | gattgtgact  | ttggatagtt  | aatcagtaaa  | atataaatgt  | gtcga       | 2935 |

&lt;210&gt; 21

&lt;211&gt; 3828

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 21

|             |             |             |             |             |             |      |
|-------------|-------------|-------------|-------------|-------------|-------------|------|
| aagacaacgt  | cactagcagt  | ttctggagct  | acttgccaag  | gctgagtgtg  | agctgagcct  | 60   |
| gccccaccac  | caagatgatc  | ctgagcttgc  | tgthtcagcct | tggggggcccc | ctgggctggg  | 120  |
| ggctgctggg  | ggcatggggc  | caggcttcca  | gtactagcct  | ctctgatctg  | cagagctcca  | 180  |
| ggacacctgg  | ggtctggaag  | gcagaggctg  | aggacaccag  | caaggacccc  | gttgagcgtg  | 240  |
| actggtgccc  | ctacccaatg  | tccaagctgg  | tcaccttact  | agctctttgc  | aaaacagaga  | 300  |
| aattcctcat  | ccactcgcag  | cagccgtgtc  | cgcaggggagc | tccagactgc  | cagaaagtca  | 360  |
| aagtcatgta  | cgcctatggc  | cacaagccag  | tgtaccaggt  | caagcagaag  | gtgctgacct  | 420  |
| ctttggcctg  | gaggtgctgc  | cctggctaca  | cggggcccaa  | ctgagagcac  | cacgattcca  | 480  |
| tggcaatccc  | tgagcctgca  | gatcctgggtg | acagccacca  | ggaacctcag  | gatggaccag  | 540  |
| tcagcttcaa  | acctggccac  | cttgctgcag  | tgatcaatga  | ggttgagggtg | caacaggaac  | 600  |
| agcaggaaca  | tctgctggga  | gatctccaga  | atgatgtgca  | ccgggtggca  | gacagcctgc  | 660  |
| caggcctgtg  | gaaagccctg  | cctggtaacc  | tcacagctgc  | agtgatggaa  | gcaaatacaa  | 720  |
| cagggcacga  | gttccctgat  | agatccttgg  | agcagggtgt  | gctacccccc  | gtggacacct  | 780  |
| tcctacaagt  | gcatttcagc  | cccattctgga | ggagctttaa  | ccaaagcctg  | cacagcctta  | 840  |
| cccaggccat  | aagaaacctg  | tctcttgacg  | tggaggccaa  | ccgccaggcc  | atctccagag  | 900  |
| tccaggacag  | tgccgtggcc  | agggctgact  | tccaggagct  | tgggtgccaa  | tttgaggcca  | 960  |
| aggtccagga  | gaacactcag  | agagtgggtc  | agctgcgaca  | ggacgtggag  | gaccgcctgc  | 1020 |
| acgcccagca  | ctttaccctg  | caccgctcga  | tctcagagct  | ccaagccgat  | gtggacacca  | 1080 |
| aattgaagag  | gctgcacaa   | gctcaggagg  | ccccagggac  | caatggcagt  | ctggtgttgg  | 1140 |
| caacgcctgg  | ggctggggca  | agccctgagc  | cggacagcct  | gcaggccagg  | ctggggccagc | 1200 |
| tgagaggaa   | cctctcagag  | ctgcacatga  | ccacggccccg | cagggaggag  | gagttgcagt  | 1260 |
| acaccctgga  | ggacatgagg  | gccaccctga  | cccgccacgt  | ggatgagatc  | aaggaactgt  | 1320 |
| actccgaatc  | ggacgagact  | ttcgatcaga  | ttagcaaggt  | ggagcggcag  | gtggaggagc  | 1380 |
| tgaggtgaa   | ccacacggcg  | ctccgtgagc  | tgccgctgat  | cctgatggag  | aagtctctga  | 1440 |
| tcagtgagga  | gaacaaggag  | gaggtggagc  | ggcagctcct  | ggagctcaac  | ctcacgctgc  | 1500 |
| agcacctgca  | gggtggccat  | gccgacctca  | tcaagtacgt  | gaaggactgc  | aattgccaga  | 1560 |
| agctctatth  | agacctggac  | gtcatccggg  | agggccagag  | ggacgccacg  | cgtgccctgg  | 1620 |
| aggagaccca  | ggtgagcctg  | gacgagcggc  | ggcagctgga  | cggctcctcc  | ctgcaggccc  | 1680 |
| tgagaaacgc  | cgtggacgcc  | gtgtcgtctg  | ccgtggacgc  | gcacaaagcg  | gagggcgagc  | 1740 |
| gggcgcgggc  | ggccacgtcg  | cggctccgga  | gccaaagtga  | ggcgctggat  | gacgaggtgg  | 1800 |
| gcgcgctgaa  | ggcgcccgcg  | gccgaggccc  | gccacgaggt  | gcgccagctg  | cacagccct   | 1860 |
| tcgcccgcct  | gctggaggac  | gcgctgcggc  | acgagggcgt  | gctggcccgcg | ctcttcgggg  | 1920 |
| aggaggtgct  | ggaggagatg  | tctgagcaga  | cgcggggacc  | gctgcccctg  | agctacgagc  | 1980 |
| agatccgcgt  | ggccctgcag  | gacgcgcgta  | gcgggctgca  | ggagcaggcg  | ctcggtctgg  | 2040 |
| acgagctggc  | cgcccagagt  | acggccctgg  | agcaggcctc  | ggagcccccg  | cggccggcag  | 2100 |
| agcacctgga  | gcccagccac  | gacgcggggc  | gcgaggaggc  | cgccaccacc  | gccctggccg  | 2160 |
| ggctggcgcg  | ggagctccag  | agcctgagca  | acgacgtcaa  | gaatgtcggg  | cgggtgctgcg | 2220 |
| aggcygaggc  | cggggccggg  | gccgcctccc  | tcaacgcctc  | ccttgacggc  | ctccacaacg  | 2280 |
| cactcttcgc  | cactcagcgc  | agcttgaggc  | agcaccagcg  | gctcttccac  | agcctctttg  | 2340 |
| ggaacttcca  | agggctcatg  | gaagccaacg  | tcagcctgga  | cctgggggaa  | ctgcagacca  | 2400 |
| tgctgagcag  | gaaagggaag  | aagcagcaga  | aagacctgga  | agctccccgg  | aagaggggaca | 2460 |
| agaagggaagc | ggagcctttg  | gtggacatac  | gggtcacagg  | gcctgtgcca  | ggtgccttgg  | 2520 |
| gcgcggcgct  | ctgggaggca  | grwtcccctg  | tgcccttcta  | tgccagcttt  | tcagaagggga | 2580 |
| cggctgcctc  | gcagacagtg  | aagttcaaca  | ccacatacat  | caacattggc  | agcagctact  | 2640 |
| tcctgaaca   | tggtacttct  | cgagcccttg  | agcgtgggtg  | ctacctgttt  | gcagtgagcg  | 2700 |
| ttgaattttg  | cccaggggcca | ggcacccggc  | agctgggtgt  | tggaggtcac  | catcggaactc | 2760 |
| cagtctgtac  | cactggggcag | gggagtgga   | gcacagcaac  | ggtctttgcc  | atggctgagc  | 2820 |

|             |             |             |            |             |             |      |
|-------------|-------------|-------------|------------|-------------|-------------|------|
| tgcagaaggg  | tgagcgagta  | tggtttgagt  | taacccaggg | atcaataaca  | aagagaagcc  | 2880 |
| tgtcggggcac | tgcatattggg | ggcttcctga  | tggttaagac | ctgaacccca  | gccccaatct  | 2940 |
| gatcagacat  | catggactcg  | cccagctctc  | ctcggcctgg | ggctctggcc  | aaggatgggc  | 3000 |
| tggaggtcat  | tcagttggtc  | tgtctcttcc  | ctggaaacct | tctgcaaaga  | tggtgtggtg  | 3060 |
| tacgtggctt  | ccctgtaacc  | acatggggct  | tggccatttc | tccatgatga  | gaaggactgg  | 3120 |
| aatgcttctc  | cgggcaggac  | atggctcctag | gaagcctgaa | ccttggcttg  | gcatgccttc  | 3180 |
| tcagacagca  | cggcctgggc  | tccaactctt  | caccacaccc | tgtattctac  | aacttctttg  | 3240 |
| gtgttttgct  | cctcctgtgg  | ttggaaactt  | ctgtacaaca | ctttaaactt  | ttctcttgct  | 3300 |
| tectcttctc  | ttctccctta  | tcgtatgata  | gaaagacatt | cttccccagg  | aggaatgttt  | 3360 |
| aaaatggagg  | caacattttg  | gccaacattg  | gaaagcacta | gagggcaatg  | ggattaaacc  | 3420 |
| aacctgcttg  | gtctctatta  | gtcagtaatg  | aagacgacag | cctggccaac  | caagggaaag  | 3480 |
| gaaattagta  | tcttttagttt | cagtcattcc  | ttgtaggata | tggttttagct | gtgccccac   | 3540 |
| ctaaaatata  | atcttgaatt  | gtaatcccta  | taatccccac | atcaaggag   | agatcagggtg | 3600 |
| gaggtaattg  | gatcttgggg  | gcggttcccc  | catgctgttc | ttgtgatagt  | tctcacgaga  | 3660 |
| tctgatgatt  | ttataagttt  | gatagtccct  | cctgtgttca | ttctccttcc  | tgccaccttg  | 3720 |
| tgaagatgcc  | ttggttcctc  | ttcactgtct  | gccatgattg | taagtttccct | gaggcctccc  | 3780 |
| cagccatgtg  | gaacagttag  | tcaattaaac  | ctctttcctt | tataaatt    |             | 3828 |

&lt;210&gt; 22

&lt;211&gt; 238

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 22

|             |            |            |             |             |            |     |
|-------------|------------|------------|-------------|-------------|------------|-----|
| atgggcaaaag | acttcatgac | taaaacacca | aaagcatttg  | caacaaaagc  | caaaattgac | 60  |
| aaatgggatc  | taattaaact | aaagagcttc | tgacacagcaa | aagaaactat  | catcagagtg | 120 |
| aacagtcaac  | ctacagactg | gcagaaaact | tttgcaatct  | atccatctga  | caaaggggta | 180 |
| atagccagaa  | tctacaagga | gcttgaacaa | atttataaga  | aaaaaaaaacc | aacaaaaa   | 238 |

&lt;210&gt; 23

&lt;211&gt; 1706

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 23

|             |             |             |             |             |            |      |
|-------------|-------------|-------------|-------------|-------------|------------|------|
| cgctccgcac  | acatttctctg | tcgcggccta  | agggaaaactg | ttggccgctg  | ggcccgcggg | 60   |
| gggattcttg  | gcagttgggg  | ggctccgtcgg | gagcgagggc  | ggaggggaag  | ggagggggaa | 120  |
| ccgggttggg  | gaagccagct  | gtagagggcg  | gtgaccgcgc  | tccagacaca  | gctctgcgtc | 180  |
| ctcgagcggg  | acagatccaa  | gttgggagca  | gctctgcgtg  | cggggcctca  | gagaatgagg | 240  |
| ccggcgttcg  | ccctgtgcct  | cctctggcag  | gcgctctggc  | ccgggcccggg | cggcgcgcaa | 300  |
| cacccccactg | ccgaccgctg  | tggtgtctcg  | gcctcggggg  | cctgctacag  | cctgcaccac | 360  |
| gctaccatga  | agcggcaggc  | ggccgaggag  | gcctgcatcc  | tgcgaggtgg  | ggcgctcagc | 420  |
| accgtgcgtg  | cgggcgcgca  | gctgcgcgct  | gtgctgcgcg  | tcctgcgggc  | aggcccaggg | 480  |
| cccggagggg  | gctccaaaga  | cctgctgttc  | tggtgcgcac  | tgagcgcag   | gcgttcccac | 540  |
| tgacccctgg  | agaacgagcc  | tttgcggggt  | ttctcctggc  | tgctctccga  | cccggcggt  | 600  |
| ctcgaaagcg  | acacgctgca  | gtgggtggag  | gagccccaac  | gctcctgcac  | cgcgcggaga | 660  |
| tgcgcggtac  | tccaggccac  | cgggtggggtc | gagcccgag   | ctggaaggag  | atgcgatgcc | 720  |
| acctgcgcgc  | caacggctac  | ctgtgcaagt  | accagtttga  | ggtcttgtgt  | cctgcgcgcg | 780  |
| gccccggggc  | cgctctaac   | ttgagctatc  | gcgcgcctt   | ccagctgcac  | agcgcgcgtc | 840  |
| tggacttcag  | tccacctggg  | accgaggtga  | gtgcgctctg  | ccggggacag  | ctcccgatct | 900  |
| cagttacttg  | catcgcggac  | gaaatcggcg  | ctcgtctggg  | caaactctcg  | ggcgatgtgt | 960  |
| tgtgtccctg  | ccccgggagg  | tacctccgtg  | ctggcaaatg  | cgcagagctc  | cctaactgcc | 1020 |
| tagacgactt  | gggaggcttt  | gcctgcgaat  | gtgctacggg  | cttcgagctg  | gggaaggacg | 1080 |
| gccgctcttg  | tgtgaccagt  | ggggaaggac  | agccgaccct  | tggggggacc  | ggggtgccca | 1140 |
| ccaggcgccc  | gccggccact  | gcaaccagcc  | ccgtgccgca  | gagaacatgg  | ccaatcaggg | 1200 |
| tcgacgagaa  | gctgggagag  | acaccacttg  | tccctgaaca  | agacaattca  | gtaacattca | 1260 |
| ttcctgagat  | tcctcgatgg  | ggatcacaga  | gcacgatgtc  | tacccttcaa  | atgtcccttc | 1320 |
| aagccgagtc  | aaaggccact  | atcaccccat  | cagggagcgt  | gatttccaag  | tttaattcta | 1380 |
| cgacttcttc  | tgccactcct  | caggctttcg  | actcctcctc  | tgccgtgggc  | ttcatatttg | 1440 |
| tgagcacagc  | agtagtagtg  | ttggtgatct  | tgaccatgac  | agtactgggg  | cttgtcaagc | 1500 |
| tctgctttca  | cgaaagcccc  | tcttcccagc  | caaggaagga  | gtctatgggc  | ccgcccgggc | 1560 |

|            |             |            |            |            |            |      |
|------------|-------------|------------|------------|------------|------------|------|
| tggagagtga | tccctgagccc | gctgctttgg | gctccagttc | tgcacattgc | acaaacaatg | 1620 |
| gggtgaaagt | cggggactgt  | gatctgcggg | acagagcaga | gggtgccttg | ctggcggagt | 1680 |
| ccccctcttg | ctctagtgat  | gcatag     |            |            |            | 1706 |

<210> 24  
 <211> 1944  
 <212> DNA  
 <213> Homo sapiens

|             |             |             |             |             |             |      |
|-------------|-------------|-------------|-------------|-------------|-------------|------|
| <400> 24    |             |             |             |             |             |      |
| atggggcaaag | acttcatgac  | taaaacacca  | aaagcattttg | caacaaaagc  | caaaattgac  | 60   |
| aaatgggatc  | taattaaact  | aaagagcttc  | tgcacagcaa  | aagaaactat  | catcagagtg  | 120  |
| aacagtcaac  | ctacagactg  | gcagaaaact  | tttgcaatct  | atccatctga  | caaaggggta  | 180  |
| atagccagaa  | tctacaagga  | gcttgaacaa  | at ttataaga | aaaaaaaaacc | aacaaaaacg  | 240  |
| ctccgcacac  | at ttcctgtc | gcggcctaag  | ggaaactgtt  | ggccgctggg  | cccgcggggg  | 300  |
| gattcttggc  | agttgggggg  | tccgtcggga  | gcgagggcgg  | aggggaaggg  | agggggaacc  | 360  |
| gggttgggga  | agccagctgt  | agagggcggg  | gaccgcgctc  | cagacacagc  | tctgcgtcct  | 420  |
| cgagcgggac  | agatccaaagt | tgggagcagc  | tctgcgtgcg  | gggcctcaga  | gaatgaggcc  | 480  |
| ggcgttcgcc  | ctgtgcctcc  | tctggcaggc  | gctctggccc  | gggcggggcg  | gcggcgaaca  | 540  |
| ccccactgcc  | gaccgtgctg  | gctgctcggc  | ctcggggggc  | tgctacagcc  | tgaccacgc   | 600  |
| taccatgaag  | cggcaggcgg  | ccgaggaggc  | ctgcatcctg  | cgaggtgggg  | cgctcagcac  | 660  |
| cgtgcgtgcg  | ggcgccgagc  | tgcgcgctgt  | gctcgcgctc  | ctgcgggcag  | gcccaggggc  | 720  |
| cggagggggc  | tccaaagacc  | tgctgtttctg | ggtcgcactg  | gagcgcaggc  | gttcccactg  | 780  |
| caccctggag  | aacgagcctt  | tgccggggttt | ctcctggctg  | tcctccgacc  | ccggcgggtct | 840  |
| cgaaagcgac  | acgctgcagt  | gggtggagga  | gccccaacgc  | tcctgcaccg  | cgcgagatg   | 900  |
| cgcggtactc  | caggccaccg  | gtggggtcga  | gcccgcagct  | ggaaggagat  | gcgatgccac  | 960  |
| ctgcgcgcca  | acggctacct  | gtgcaagtac  | cagtttgagg  | tcttgtgtcc  | tgcgccgcgc  | 1020 |
| cccggggccg  | cctctaactt  | gagctatcgc  | gcgcccttcc  | agctgcacag  | cgccgctctg  | 1080 |
| gacttcagtc  | cacctgggac  | cgaggtgagt  | gcgctctgcc  | ggggacagct  | cccgatctca  | 1140 |
| gttacttgca  | tgcgggacga  | aatcggcgct  | cgctgggaca  | aactctcggg  | cgatgtgttg  | 1200 |
| tgccccctgc  | ccgggaggta  | cctccgtgct  | ggcaaatgcg  | cagagctccc  | taactgccta  | 1260 |
| gacgacttgg  | gaggtcttgc  | ctgcgaatgt  | gctacgggct  | tcgagctggg  | gaaggacggc  | 1320 |
| cgtctcttgg  | tgaccagtgg  | ggaaggacag  | ccgacccttg  | gggggacggg  | ggtgcccacc  | 1380 |
| aggcgcccgc  | cggccactgc  | aaccagcccc  | gtgcccgaga  | gaacatggcc  | aatcagggtc  | 1440 |
| gacgagaagc  | tgggagagac  | accacttgtc  | cctgaacaag  | acaattcagt  | aacatctatt  | 1500 |
| cctgagattc  | ctcgatgggg  | atcacagagc  | acgatgtcta  | cccttcaaat  | gtcccttcaa  | 1560 |
| gccgagtcaa  | aggccactat  | caccccatca  | gggagcgtga  | tttccaagtt  | taattctacg  | 1620 |
| acttccctctg | ccactcctca  | ggctttcgac  | tcctcctctg  | ccgtgggtctt | catatttgtg  | 1680 |
| agcacagcag  | tagtagtggt  | ggtgatcttg  | accatgacag  | tactggggct  | tgtcaagctc  | 1740 |
| tgctttcacg  | aaagccccctc | ttcccagcca  | aggaaggagt  | ctatggggccc | gccgggcctg  | 1800 |
| gagagtgatc  | ctgagccccgc | tgctttgggc  | tccagttctg  | cacattgcac  | aaacaatggg  | 1860 |
| gtgaaagtgc  | gggactgtga  | tctgcgggac  | agagcagagg  | gtgccttgct  | ggcggagtcc  | 1920 |
| cctcttggct  | ctagtgatgc  | atag        |             |             |             | 1944 |

<210> 25  
 <211> 1408  
 <212> DNA  
 <213> Homo sapiens

|            |            |             |            |             |            |     |
|------------|------------|-------------|------------|-------------|------------|-----|
| <400> 25   |            |             |            |             |            |     |
| aaatgggatt | gagttaaaac | tatttttattt | taaatataca | ttttaagca   | gttctttttt | 60  |
| tttttttttt | ttttattata | cacacacttc  | aagagaatat | gcacagtcta  | ggccggggc  | 120 |
| ggtggtcac  | gcctgtaatc | ccagcacttt  | gggaggccga | ggcatgtgga  | tcacctgagg | 180 |
| tcaggagtgt | gagaccagcc | tagacaacat  | ggtgaaacct | tgtctctatg  | aaaaatacaa | 240 |
| aatttgctgg | gagtgggtgt | gcatgcctgt  | aatcccagct | acttgggaagg | ctgaggcagg | 300 |
| agaatgtctt | gaacctagga | ggtggagggt  | gcagtgaagt | gagattgcac  | cattgcactc | 360 |
| cagcctgtgc | aacaaaagtg | aaactccatt  | tcaagaaaaa | aaaaaaaaaa  | agaatatgca | 420 |
| cagtctgaat | gtataccagg | agtgtgagag  | acacatgccc | acttcatgca  | actcctaaac | 480 |
| tcaaagtcta | aatcagatat | ttttattaac  | aatgacaact | tggtgccaac  | tcctgttttc | 540 |
| taatcaccaa | agaccagggg | tacctaaaag  | gactttgcaa | ccaagcaaa   | tcactgtctt | 600 |
| caaactctga | tacacacttt | cccctctgta  | gattcaaaa  | gtgcttcctt  | cccggctgtc | 660 |

|             |             |             |            |            |            |      |
|-------------|-------------|-------------|------------|------------|------------|------|
| tccagcttcc  | ttactctctt  | ttctgggatt  | tctttttctt | ctttctttct | ggctcttctt | 720  |
| ccactggctg  | aactgggtcc  | cctaactgaa  | acagcccctg | acttagccca | agcatgcttc | 780  |
| cttttagctgc | tgtgagaatt  | ttgtcttctt  | caccagccag | gtcctcaagg | caaagtcctc | 840  |
| agccagtgc   | ttaagagcaa  | cttcccgcga  | atcagaaact | cactgtgatt | ccaaaaatgt | 900  |
| ttctgagccc  | tggaccctctg | ccccaaaat   | attttcatct | ttccccaaa  | cctcctttaa | 960  |
| aggagcatgc  | ataacagtgt  | gctgaaagac  | agttgttggt | tttttgattt | tagcatatta | 1020 |
| tttctgtat   | gaaatatgtt  | ttatataatc  | tcctattatt | tttatcttat | gttttgtatt | 1080 |
| gttgataaat  | ccctttttgt  | ccttctaaga  | tgttctattg | taaaatcact | tataaggtat | 1140 |
| gattactctt  | tatgctatta  | ctttatatgc  | catttgggta | ataaatagta | aatgggtgat | 1200 |
| gatatgattg  | actgatgcgc  | agtccagagc  | atgtatgaat | aatctcataa | aacagtatca | 1260 |
| cagacattaa  | gctaaactgt  | ttcgtttttt  | tgaagaaca  | actcatactt | tggaacagtt | 1320 |
| gtcaatatta  | atttgttgca  | aatattttaat | ttaaataaac | atttttgtac | catgaaaaaa | 1380 |
| aaaaaaaaaa  | aaaaaaaaaa  | aaaaaaaaaa  |            |            |            | 1408 |

<210> 26  
 <211> 3166  
 <212> DNA  
 <213> Homo sapiens

|            |            |            |            |             |            |      |
|------------|------------|------------|------------|-------------|------------|------|
| <400> 26   |            |            |            |             |            |      |
| gtccgcgcgt | gtccgcgccc | gcgtgtgcca | gcgcgcgtgc | cttggccgtg  | cgcgccgagc | 60   |
| cgggtcgcac | taactccctc | ggcgccgacg | gcggcgctaa | cctctcgggt  | attccaggat | 120  |
| ctttggagac | ccgaggaaag | ccgtgttgac | caaaagcaag | acaaatgact  | cacagagaaa | 180  |
| aaagatggca | gaaccaaggg | caactaaagc | cgtcagggtc | tgaacagctg  | gtagatgggc | 240  |
| tggcttactg | aaggacatga | ttcagactgt | cccggaccca | gcagctcata  | tcaaggaagc | 300  |
| cttatcagtt | gtgagtgagg | accagtcggt | gtttgagtgt | gcctacggaa  | cgccacacct | 360  |
| ggctaagaca | gagatgaccg | cgctcctctc | cagcgactat | ggacagactt  | ccaagatgag | 420  |
| cccacgcgtc | cctcagcagg | attggctgtc | tcaaccccca | gccagggtca  | ccatcaaaat | 480  |
| ggaatgtaac | cctagccagg | tgaatggctc | aaggaactct | cctgatgaat  | gcagtgtggc | 540  |
| caaaggcggg | aagatggtgg | gcagcccaga | caccgttggg | atgaactacg  | gcagctacat | 600  |
| ggaggagaag | cacatgccac | ccccaaacat | gaccacgaac | gagcgcagag  | ttatcgtgcc | 660  |
| agcagatcct | acgctatgga | gtacagacca | tgtgcggcag | tggctggagt  | gggcggtgaa | 720  |
| agaatatggc | cttccagacg | tcaacatctt | gttattccag | aacatcgatg  | ggaaggaact | 780  |
| gtgcaagatg | accaaggacg | acttccagag | gctcaccccc | agctacaacg  | ccgacatcct | 840  |
| tctctcacat | ctccactacc | tcagagagac | tctcttcca  | catttgactt  | cagatgatgt | 900  |
| tgataaagcc | ttacaaaact | ctccacgggt | aatgcatgct | agaaacacag  | atttaccata | 960  |
| tgagccccc  | aggagatcag | cctggaccgg | tcacggccac | cccacgcccc  | agtcgaaagc | 1020 |
| tgctcaacca | tctccttcca | cagtgcccaa | aactgaagac | cagcgtcctc  | agttagatcc | 1080 |
| ttatcagatt | cttggaccaa | caagtagccg | ccttgcaaat | ccaggcagtg  | gccagatcca | 1140 |
| gctttggcag | ttcctcctgg | agctcctgtc | ggacagctcc | aactccagct  | gcatcacctg | 1200 |
| ggaaggcacc | aacggggagt | tcaagatgac | ggatcccagc | gaggtggccc  | ggcgttgggg | 1260 |
| agagcgaag  | agcaaaccca | acatgaacta | cgataagctc | agccgcgccc  | tccgttacta | 1320 |
| ctatgacaag | aacatcatga | ccaaggtcca | tgggaagcgc | tacgcctaca  | agttcgactt | 1380 |
| ccacgggac  | gcccaggccc | tccagcccca | ccccccggag | tcatctctgt  | acaagtaccc | 1440 |
| ctcagacctc | ccgtacatgg | gctcctatca | cgccccacca | cagaagatga  | actttgtggc | 1500 |
| gccccacctt | ccagccctcc | ccgtgacatc | ttccagtttt | tttgetgccc  | caaaccata  | 1560 |
| ctggaattca | ccaactgggg | gtatataccc | caacactagg | ctccccacca  | gccatattgc | 1620 |
| ttctcatctg | ggcacttact | actaaagacc | tggcggaggc | ttttcccatc  | agcgtgcatt | 1680 |
| caccagccca | tcgccacaaa | ctctatcgga | gaacatgaat | caaaagtgcc  | tcaagaggaa | 1740 |
| tgaaaaaagc | tttactgggg | ctggggaagg | aagccgggga | agagatccaa  | agactcttgg | 1800 |
| gagggagtta | ctgaagtctt | actacagaaa | tgaggaggat | gctaaaaatg  | tcacgaatat | 1860 |
| ggacatatca | tctgtggact | gaccttgtaa | aagacagtgt | atgtagaagc  | atgaagtctt | 1920 |
| aaggacaaag | tgccaaagaa | agtggctcta | agaaatgtat | aaactttaga  | gtagagtttg | 1980 |
| aatcccacta | atgcaaactg | ggatgaaact | aaagcaatag | aaacaacaca  | gttttgacct | 2040 |
| aacataccgt | ttataatgcc | attttaagga | aaactacctg | tattttaaaaa | tagtttcata | 2100 |
| tcaaaaacaa | gagaaaagac | acgagagaga | ctgtggccca | tcaacagacg  | ttgatatgca | 2160 |
| actgcatggc | atgtgctgtt | ttggttgaaa | tcaaatacat | tccgtttgat  | ggacagctgt | 2220 |
| cagctttctc | aaactgtgaa | gatgacccaa | agtttccaac | tcttttacag  | tattaccggg | 2280 |
| actatgaact | aaaaggtggg | actgaggatg | tgtatagagt | gagcgtgtga  | ttgtagacag | 2340 |
| aggggtgaag | aaggaggagg | aagaggcaga | gaaggaggag | accaggctgg  | gaaagaaact | 2400 |
| tctcaagcaa | tgaagactgg | actcaggaca | tttggggact | gtgtacaatg  | agttatggag | 2460 |



|             |             |             |             |            |            |      |
|-------------|-------------|-------------|-------------|------------|------------|------|
| actcgaggggt | tcatgcagtc  | agtgttatac  | caaaccacagt | gttaggagaa | aggacacagc | 2520 |
| gtaatggaga  | aaggggaagta | gtagaattca  | gaaacaaaaa  | tgcgcatctc | tttctttgtt | 2580 |
| tgtcaaataa  | aaatttttaac | tggaaattgtc | tgatatttaa  | gagaaacatt | caggacctca | 2640 |
| tcattatgtg  | ggggcctttgt | tctccacagg  | gtcaggtaag  | agatggcctt | cttggtgcc  | 2700 |
| acaatcagaa  | atcacgcagg  | catttttgggt | aggcggcctc  | cagttttcct | ttgagtcgag | 2760 |
| aacgctgtgc  | gtttgtcaga  | atgaagtata  | caagtcaatg  | tttttcccc  | tttttatata | 2820 |
| ataattatat  | aacttatgca  | tttatacact  | acgagttgat  | ctcggccagc | caaagacaca | 2880 |
| cgacaaaaga  | gacaatcgat  | ataatgtggc  | cttgaatttt  | aactctgtat | gcttaatgtt | 2940 |
| tacaatatga  | agttattagt  | tcttagaatg  | cagaatgtat  | gtaataaaat | aagcttggcc | 3000 |
| tagcatggca  | aatcagattt  | atacaggagt  | ctgcatttgc  | acttttttta | gtgactaaag | 3060 |
| ttgcttaaatg | aaaacatgtg  | ctgaatgttg  | tggattttgt  | gttataattt | actttgtcca | 3120 |
| ggaacttgtg  | caagggagag  | ccaaggaaat  | aggatgtttg  | gcaccc     |            | 3166 |

<210> 27

<211> 4289

<212> DNA

<213> Homo sapiens

<400> 27

|            |            |            |             |            |             |      |
|------------|------------|------------|-------------|------------|-------------|------|
| aggaaacggt | ttattaggag | ggagtgggtg | agctggggcca | ggcaggaaga | cgctggaata  | 60   |
| agaaacattt | ttgtccagc  | ccccatccca | gtcccgggag  | gctgccgcgc | cagctgcgcc  | 120  |
| gagcgagccc | ctccccggt  | ccagcccggg | ccggggccgc  | gccggacccc | agcccgcctg  | 180  |
| ccagcgctgg | cggtgcaact | gcggccgcgc | gggtggagggg | aggtggcccc | ggctcccgga  | 240  |
| aggctagcgc | cccgccaccc | gcagagcggg | cccagaggga  | ccatgacctt | gggtccccc   | 300  |
| aggaaaggcc | ttctgatgct | gctgatggcc | ttggtgaccc  | agggagaccc | tgtgaagccg  | 360  |
| tctcggggcc | cgctggtgac | ctgcacgtgt | gagagccac   | attgcaaggg | gcctacctgc  | 420  |
| cggggggccc | ggtgcacagt | agtgtggtg  | cgggaggagg  | ggaggcacc  | ccaggaacat  | 480  |
| cggggctgcg | ggaacttgca | cagggagctc | tgccgggggc  | gccccaccga | gttcgtcaac  | 540  |
| cactactgct | gcgacagcca | cctctgcaac | cacaacgtgt  | ccctggtgct | ggaggccacc  | 600  |
| caacctcctt | cggagcagcc | gggaacagat | ggccagctgg  | ccctgatcct | gggccccgtg  | 660  |
| ctggccttgc | tggccctggg | ggccctgggt | gtcctgggac  | tgtggcatgt | ccgacggagg  | 720  |
| caggagaagc | agcgtggcct | gcacagcgag | ctgggagagt  | ccagtctcat | cctgaaagca  | 780  |
| tctgagcagg | gcgacacgat | gttgggggac | ctcctggaca  | gtgactgcac | cacagggagt  | 840  |
| ggctcagggc | tccccctcct | ggtgcagagg | acagtggcac  | ggcaggttgc | cttgggtggag | 900  |
| tgtgtgggaa | aaggccgcta | tggcgaaagt | tggcggggct  | tgtggcacgg | tgagagtgtg  | 960  |
| gccgtcaaga | tcttctctct | gagggatgaa | cagtcctggt  | tccgggagac | tgagatctat  | 1020 |
| aacacagtat | tgctcagaca | cgacaacatc | ctaggcttca  | tcgcctcaga | catgacctcc  | 1080 |
| cgcaactcga | gcacgcagct | gtggctcatc | acgcactacc  | acgagcacgg | ctccctctac  | 1140 |
| gactttctgc | agagacagac | gctggagccc | catctggctc  | tgaggctagc | tgtgtccgcg  | 1200 |
| gcatgcggcc | tggcgcacct | gcacgtggag | atcttcggta  | cacagggcaa | accagccatt  | 1260 |
| gcccaccgcg | acttcaagag | ccgcaatgtg | ctggtcaaga  | gcaacctgca | gtgttgcatc  | 1320 |
| gccgacctgg | gcttggctgt | gatgcactca | cagggcagcg  | attacctgga | catcggcaac  | 1380 |
| aacccgagag | tgggcaccaa | gcggtacatg | gcacccgagg  | tgttgacga  | gcagatccgc  | 1440 |
| acggactgct | ttgagtccta | caagtggact | gacatctggg  | cctttggcct | gggtgctgtg  | 1500 |
| gagattgccc | gccggaccat | cgtgaatggc | atcgtggagg  | actatagacc | acccttctat  | 1560 |
| gatgtgggtg | ccaatgaccc | cagctttgag | gacatgaaga  | aggtggtgtg | tgtggatcag  | 1620 |
| cagaccccca | ccatccctaa | ccggctggct | gcagacccgg  | tcctctcagg | cctagctcag  | 1680 |
| atgatgcggg | agtgtgtgta | cccaaaccct | tctgcccagc  | tcaccgcgct | gcggatcaag  | 1740 |
| aagacactac | aaaaaattag | caacagtcca | gagaagccta  | aagtgattca | atagcccagg  | 1800 |
| agcacctgat | tcctttctgc | ctgcaggggg | ctgggggggt  | ggggggcagt | ggatggtgcc  | 1860 |
| ctatctgggt | agaggtagtg | tgagtgtggt | gtgtgctggg  | gatgggcagc | tgcgcctgcc  | 1920 |
| tgctcggccc | ccagcccacc | cagccaaaaa | tacagctggg  | ctgaaacctg | atccccctgt  | 1980 |
| gtctggcctg | ctcaaagcgg | caggctccct | gacgcctggc  | tctctcccca | cccctatggc  | 2040 |
| cagcatggtg | caccccttac | cactcccggg | acaggatgca  | aaagaggctc | cagagtcaga  | 2100 |
| gtgccaagcg | agggaatccc | agtcccagac | tcagagcccg  | ggcctgcact | ttgccccctg  | 2160 |
| cccttgatca | acccactgc  | cccaccagag | ctgccagggt  | ggcacagggc | cctgtccagc  | 2220 |
| ccctggcaca | cacttccctg | ccaggcctca | gcctctagca  | taagctccag | agagccaggg  | 2280 |
| cccatcagtt | tctctctgtg | gatttgtatc | tcagctccat  | gatgccttgg | gctttctgtc  | 2340 |
| tcctcaacaa | gagtgcagct | tgctgaatgt | cagctgcctg  | agagagctgg | ggcctgactt  | 2400 |
| actagggcat | taaatcctaa | gaggtcctac | tgagggtgtg  | caggatcaca | ggccagtggg  | 2460 |
| aaaagggcag | gtcagatggg | caaggcccag | gactttcaga  | ttaactgaga | ggatatcgag  | 2520 |

|             |             |             |             |             |             |      |
|-------------|-------------|-------------|-------------|-------------|-------------|------|
| gccaaagcatg | gcaggggggaa | ggtcagtgagg | tgtcaagaga  | cccaggtctg  | accccgatg   | 2580 |
| tttgctccat  | gtgacaaaag  | caggcctgtc  | tcaggacctt  | ttcttttctt  | ttttccttct  | 2640 |
| tttttttttt  | gacacggagt  | ttcgctcttg  | ttgtccaggc  | tagagtgaac  | tggcatgatc  | 2700 |
| ccagctcacc  | gcaacgtcta  | cctcccagg   | tcaaatcatt  | ctcttgcttc  | agactcccga  | 2760 |
| gtagctggga  | ttacaggcac  | atgccaccat  | gcctggctaa  | ttttgtatat  | ttagtagaaa  | 2820 |
| cagggtttca  | ccatgctggc  | catgctgggt  | ctcgaaactcc | tgacctcagg  | tgttccacct  | 2880 |
| acctcagcct  | cccaaagtgc  | tgggggtaca  | ggtgtgagcc  | atcgcgcttg  | gccaggacct  | 2940 |
| ttgtttctta  | tctacatatt  | ggaagatttg  | gtcctgatgt  | cctttgaggg  | ttcttttagct | 3000 |
| ctagttctct  | gacacttcag  | cctatatcac  | agctaacttc  | ytcagtctca  | tctattcctt  | 3060 |
| atgctccagc  | ccctggcaat  | ttgcttcaag  | atgggggttt  | gaaaataact  | ttacctgact  | 3120 |
| caaggagtgt  | ctggagcacc  | tcctagtcta  | agtctgcaag  | ctccagttct  | tgcttaaaac  | 3180 |
| catgccagtg  | gccacccttg  | ggctcagaca  | gctctggggc  | ttttgaccac  | aagccagccc  | 3240 |
| ctcgccctct  | ctgtggcata  | gtcttctctg  | ccccaggact  | gcagggcggg  | ttcttccaag  | 3300 |
| gcttccaagg  | ctcaaaaagaa | atttggtctc  | atccaagaag  | gtctcagctc  | ccctactggc  | 3360 |
| ccctggcttc  | aggcccacac  | ccctggggcca | ggscagaga   | gtgtgtctca  | ggagaattca  | 3420 |
| atgggctcta  | gagagacaca  | cagaaagttt  | gggcatttgg  | gaaattttca  | aggrtgatg   | 3480 |
| tatggytcac  | gtatggwgca  | ggttgtcctg  | gtccykgggt  | gcaggggaagt | gggctgcagg  | 3540 |
| gaagtggatt  | ggaggggagc  | ttgaggaata  | taaggagcgg  | gggtggagac  | tcaggctatg  | 3600 |
| gacaaggaca  | gccccaaagt  | tgggaagacc  | tggccttagt  | cgctctcagc  | ctagggcagg  | 3660 |
| gcagtgaaga  | aagctctccc  | cgctcctgct  | gtaatgacct  | agagtagcct  | ccccaggccg  | 3720 |
| gcatcttatg  | tgtgtcttcc  | accatcctca  | tgggtggcact | tttctaggcc  | tgtctcccag  | 3780 |
| cattgtgcaa  | ggctcggaag  | agaaccagga  | agtgaacttg  | ggtgaaaaca  | gaaagctcaa  | 3840 |
| tggatgggct  | aggttcccag  | atcattaggg  | cagagtttgc  | acgtcctctg  | gttcaactggg | 3900 |
| aatccaccca  | gcccacgaat  | catctccctc  | tttgaaggat  | tttwatttct  | actgggtttt  | 3960 |
| ggaacaaact  | cctgctgaga  | ccccacagcc  | agaaactgaa  | agcagcagct  | ccccaaagcc  | 4020 |
| tggaaaatcc  | ctaagagaag  | gcctggggga  | maggaaktgg  | agtgcagagg  | gacaggtaga  | 4080 |
| gagaaggggg  | cccaatggcc  | agggagtga   | ggaggtggcg  | ttgctgagag  | cagtctgcac  | 4140 |
| atgcttctgt  | ctgagtgcag  | gaagggtgtc  | cagggtcgaa  | attacacttc  | tcgtacctgg  | 4200 |
| agacgctgtt  | tgtgggagca  | ctgggctcat  | gcctggcaca  | caataggtct  | gcaataaacc  | 4260 |
| atggttaaat  | cctgaaaaaa  | aaaaaaaaaa  |             |             |             | 4289 |

&lt;210&gt; 28

&lt;211&gt; 1592

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 28

|             |             |             |             |             |            |      |
|-------------|-------------|-------------|-------------|-------------|------------|------|
| tatgtccacc  | aaagacacct  | cgttgggtcat | gttctatcac  | ctcttcgtca  | aattgacatc | 60   |
| aggtcctaac  | aggtcacttt  | caagatacag  | aagaggcaaa  | ttttgttttg  | agacttggcc | 120  |
| attcctaggg  | tcagcaaagt  | gtattccttg  | cagccagacc  | ttcagtcact  | tatcaggaaa | 180  |
| tgcttgacct  | aaagacagac  | aattctttcc  | ccaaactttg  | ctgtttcttt  | tttgagtctt | 240  |
| tgttgaaaga  | tttcttttaa  | aaggcggtcg  | tgtgagaaga  | tcacagcaac  | aaatctggct | 300  |
| tgttctgttt  | tagacttact  | ttcttaactc  | ttgggcagaa  | gaaaatgaat  | gagatttgaa | 360  |
| gacctttgat  | accttgggta  | gacaaagctt  | gccttgaaac  | tagaaataag  | acgaaactag | 420  |
| atttttaagg  | gaaaaaattt  | gctagtggta  | atataattgg  | ttttgtttca  | tttttttatg | 480  |
| agtctgagga  | gttgacatta  | aacgttggga  | tgttgctttg  | ttaatgaagt  | catttcaatt | 540  |
| tttgcaactc  | ttaacatctg  | catgcttcca  | taaacagtgg  | gttggaacaa  | aagaaaatgt | 600  |
| gactaaggga  | tattccttaa  | attctttttt  | atggttatgag | agagaatatt  | ggaatataaa | 660  |
| gaatgttact  | ttatctggta  | aaccatctca  | taggccagaa  | gcactaacag  | tttgaatggg | 720  |
| tggcttaaaa  | aaaaacggga  | gtctttgaa   | ttaaagcttat | gtaaaattac  | tatgcaaata | 780  |
| taggttatta  | tttattttta  | cagtgaaaat  | aaaacactat  | tgaagtataa  | atggaaagaa | 840  |
| aataaaagca  | aagcctgttt  | aatatagaga  | cattaatgtt  | gatatcactg  | tacgaacagt | 900  |
| catagcttgc  | tgctcactgc  | cgttaaaggg  | ttgacatata  | aacattgtgg  | aagagatttc | 960  |
| agtttgaggg  | ctagtgtctg  | aattatggac  | tccttaccct  | actccaccac  | ttaaaacatt | 1020 |
| ttagagactt  | ttgtgaaatt  | aacaggtcat  | ataattaata  | attgttggtt  | tatgtacatt | 1080 |
| tattgaaagg  | ccatattgag  | gctccattga  | ttttttttcc  | tgcattttta  | tcagtatcga | 1140 |
| attagaaaat  | tgaaccttca  | gtgttactag  | atggaaatct  | accaaaaagt  | agcaagggtt | 1200 |
| acgaatgggtg | ggattttattg | gtgattaaac  | atttttttcc  | tgtattttat  | aagtttcaca | 1260 |
| ttacattttac | aatgagaaaa  | aatgtaaat   | gtagaattaa  | agtcttggtta | atatcgtaat | 1320 |
| ttgcctattg  | ctgtactaaa  | agaagcttct  | ataaaatgta  | tcattctcat  | ccttagattc | 1380 |
| aggccagaaa  | gtaactttca  | gtgttaggta  | tttgaaataa  | tgcagcctgt  | catatgtact | 1440 |

|             |            |            |            |            |            |      |
|-------------|------------|------------|------------|------------|------------|------|
| ctgggttacca | gaatgaaaaa | acaaaaagag | atacatatat | agtaaggaaa | catgaaattg | 1500 |
| gaggaattga  | tccccatgtg | tattgcagct | tcatatacca | gtagtctcta | ataagtcatt | 1560 |
| gctttaataa  | aaaaaaaaat | agaaaattta | aa         |            |            | 1592 |

<210> 29  
 <211> 1234  
 <212> DNA  
 <213> Homo sapiens

|             |             |            |             |            |             |      |
|-------------|-------------|------------|-------------|------------|-------------|------|
| <400> 29    |             |            |             |            |             |      |
| tatttttcta  | cgtaaaatga  | ttctattatg | actgcctttg  | catgtagtaa | tatgacaaaag | 60   |
| tgatccttca  | ttatcacggg  | acactattgt | ttacttttca  | tctgtaaagt | ttttattgtt  | 120  |
| acttttttaa  | aatgaatttt  | tttaaaacaa | tctagccatc  | atcaagggtg | tataagagtt  | 180  |
| gtataaaaaga | tattttttgg  | atttctaggg | aagtatcagc  | caataagtat | gttagtgata  | 240  |
| tcacagattg  | taccaactat  | taactatgtt | aaataagtat  | tcagtttcat | gtgatctctg  | 300  |
| ggaaaaaaaat | atgctgcctt  | ggtgctaata | ttgtatgtat  | ttaaatagat | atctgactca  | 360  |
| gaaatataaa  | cactttttaat | gaaagggagg | aacggaagga  | caatttccag | tgacacagaat | 420  |
| cacttggatg  | aaataagacc  | agctctttac | ccttattttt  | ggatatgcct | tttttggaag  | 480  |
| agacttagac  | tttataccta  | ttgttgtagg | tggtgttaat  | attcggtgct | tcagcccacg  | 540  |
| gtgccttggt  | ctctccacaa  | tcaaatggag | gatcccccac  | gcagcttcat | tacagagtga  | 600  |
| tattgggaaa  | gtgagatcct  | ctcaccattt | tgccaagata  | ctctaaaatg | acatccaagt  | 660  |
| ttaccagtag  | aaagacacag  | gatgcacaga | atgggcatga  | ccttcagctc | acgagcacac  | 720  |
| ctggagaaat  | tcagaaccag  | gttctgaatc | atcacgattg  | ccttttgcat | gaaaacatcg  | 780  |
| gctgggtgat  | tgacttctct  | tcaggccatg | agcctaacay  | cctgccgggt | ttcatgcccc  | 840  |
| ctgcagtaat  | ggacgtttgt  | gtgaagaaat | gaactgtgga  | gtacaaaatg | ctttgagtct  | 900  |
| ttccgattgc  | tcattaattc  | acttttttgt | tacttctttc  | caaaatggaa | gtgctgaagc  | 960  |
| catggtcttt  | ctgccccctc  | aagctgatga | aggggaagcct | ttgccaatgg | cccatggaag  | 1020 |
| acacttggtt  | tgagaaaccc  | tgcccacttc | caaagaccaa  | agagattagg | aaaagcctgg  | 1080 |
| cagtattctc  | caactccaaa  | caagctctag | agtgtccag   | gaaaagttat | attcagtata  | 1140 |
| tgaataagt   | ttattctcca  | ttattaatgt | gttctgaaaa  | tatattatga | ataaatacat  | 1200 |
| caccacaccc  | aaaaaaaaaa  | aaaaaaaaaa | aaaa        |            |             | 1234 |

<210> 30  
 <211> 165  
 <212> DNA  
 <213> Homo sapiens

|            |            |            |            |            |            |     |
|------------|------------|------------|------------|------------|------------|-----|
| <400> 30   |            |            |            |            |            |     |
| atggaatgga | atggaatggc | atggaatcgt | ataaagtgga | atggaatcaa | ctcgagtgga | 60  |
| atggaatgga | atggaatgga | atggaatgca | gtacaatgca | atagaatgga | atggaatgaa | 120 |
| ctcgagttag | ctggaatgga | atggaatgga | atgcatttga | attga      |            | 165 |

<210> 31  
 <211> 1041  
 <212> DNA  
 <213> Homo sapiens

|            |             |             |            |            |             |     |
|------------|-------------|-------------|------------|------------|-------------|-----|
| <400> 31   |             |             |            |            |             |     |
| ctaaagatct | ccctccaggc  | agcccttggc  | tggtccctgc | gagcccggtg | agactgccag  | 60  |
| agatgtcttc | tttcgggttac | aggaccctga  | ctgtggccct | cttcaccctg | atctgctgtc  | 120 |
| caggatcgga | tgagaaggta  | ttcgagggtac | acgtgaggcc | aaagaagctg | gctggtgagc  | 180 |
| ccaaagggtc | cctcgagggtc | aactgcagca  | ccacctgtaa | ccagcctgaa | gtgggtgggtc | 240 |
| tggagacctc | tctaaataag  | attctgctgg  | acgaacaggc | tcagtggaaa | cattacttgg  | 300 |
| tctcaaacat | ctcccatgac  | acggctctcc  | aatgccactt | cacctgctcc | gggaagcagg  | 360 |
| agtcaatgaa | ttccaacgtc  | agcgtgtacc  | agcctccaag | gcaggtcatc | ctgacactgc  | 420 |
| aaccaccttt | ggtggctgtg  | ggcaagtcct  | tcaccattga | gtgcagggtg | cccaccgtgg  | 480 |
| agcccttgga | cagcctcacc  | ctcttctgt   | tcctgtggca | tgagactctg | cactatgaga  | 540 |
| ccttcgggaa | ggcagccctc  | gctccgcagg  | aggccacagc | cacattcaac | agcacggctg  | 600 |
| acagagagga | tggccaccgc  | aacttctcct  | gcctggctgt | gctggacttg | atgtctcgcg  | 660 |
| gtggcaacat | ctttcacaaa  | cactcagccc  | cgaagatgtt | ggagatctat | gagcctgtgt  | 720 |
| cggacagcca | gatgggtcatc | atagtcacgg  | tggtgtcggg | gttctgtgtc | ctgttcgtga  | 780 |

|            |            |            |            |            |            |      |
|------------|------------|------------|------------|------------|------------|------|
| catctgtcct | gctctgcttc | atcttcggcc | agcacttgcg | ccagcagcgg | atgggcacct | 840  |
| acggggtgcg | agcggttg   | aggaggctgc | cccaggcctt | ccggccatag | caaccatgag | 900  |
| tggcatggcc | accaccacgg | tggctactgg | aactcagtgt | gactcctcag | ggttgaggtc | 960  |
| cagccctggc | tgaaggactg | tgacaggcag | cagagacttg | ggacattgcc | ttttctagcc | 1020 |
| cgaatacaaa | cacctggact | t          |            |            |            | 1041 |

&lt;210&gt; 32

&lt;211&gt; 4000

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 32

|            |             |             |            |             |             |      |
|------------|-------------|-------------|------------|-------------|-------------|------|
| gcacgatctg | ttcctcctgg  | gaagatgcag  | aggctcatga | tgctcctcgc  | cacatcgggc  | 60   |
| gcctgcctgg | gcctgctggc  | agtggcagca  | gtggcagcag | caggtgctaa  | ccctgcccac  | 120  |
| cgggacaccc | acagcctgct  | gcccacccac  | cggcgccaaa | agagagattg  | gatttggaac  | 180  |
| cagatgcaca | ttgatgaaga  | gaaaaacacc  | tcacttcccc | atcatgtagg  | caagatcaag  | 240  |
| tcaagcgtga | gtcgcaagaa  | tgccaagtac  | ctgctcaaa  | gagaatatgt  | gggcaaggtc  | 300  |
| ttccgggtcg | atgcagagac  | aggagacgtg  | ttcgccattg | agaggctgga  | ccgggagaat  | 360  |
| atctcagagt | accacctcac  | tgctgtcatt  | gtggacaagg | acactgggtga | aaacctggag  | 420  |
| actccttcca | gcttcacat   | caaagtccat  | gacgtgaacg | acaactggcc  | tgtgttcacg  | 480  |
| catcggttgt | tcaatgcgtc  | cgtgcctgag  | tcgtcggctg | tggggacctc  | agtcattctt  | 540  |
| gtgacagcag | tggatgcaga  | cgacccact   | gtgggagacc | acgcctctgt  | catgtaccac  | 600  |
| atcctgaagg | ggaaagagta  | ttttgccatc  | gataattctg | gacgtattat  | cacaataacg  | 660  |
| aaaagcttgg | accgagagaa  | gcaggccagg  | tatgagatcg | tgggtggaagc | gcgagatgcc  | 720  |
| cagggcctcc | ggggggactc  | gggcacggcc  | accgtgctgg | tcactctgca  | agacatcaat  | 780  |
| gacaacttcc | ccttcttcac  | ccagaccaag  | tacacatttg | tcgtgcctga  | agacaccctg  | 840  |
| gtgggcacct | ctgtgggctc  | tctgtttgtt  | gaggacccag | atgagcccca  | gaaccggatg  | 900  |
| accaagtaca | gcattcttgcg | ggggcactac  | caggacgctt | tcaccattga  | gacaaacccc  | 960  |
| gcccacaacg | agggcatcat  | caagcccatg  | aagcctctgg | attatgaata  | catccagcaa  | 1020 |
| tacagcttca | tcgtcgaggc  | cacagacccc  | accatcgacc | tccgatacat  | gagccctccc  | 1080 |
| gcgggaaaca | gagcccagggt | cattatcaac  | atcacagatg | tggacgagcc  | ccccatttct  | 1140 |
| cagcagcctt | tctaccactt  | ccagctgaag  | gaaaaccaga | agaagcctct  | gattggcaca  | 1200 |
| gtgctggcca | tggactgcta  | tgcggctagg  | catagcattg | gatactccat  | ccgcaggacc  | 1260 |
| agtgacaagg | gccagttctt  | ccgagtcaca  | aaaaaggggg | acatttaca   | tgagaaagaa  | 1320 |
| ctggacagag | aagtctaccc  | ctgggtataac | ctgactgtgg | aggccaaaga  | actggattcc  | 1380 |
| actggaaccc | ccacaggaaa  | agaatccatt  | gtgcaagtcc | acattgaagt  | tttggatgag  | 1440 |
| aatgacaatg | ccccggagtt  | tgccaagccc  | taccagccca | aagtgtgtga  | gaacgctgtc  | 1500 |
| catggccagc | tggctctgca  | gatctccgca  | atagacaagg | acataacacc  | acgaaacgtg  | 1560 |
| aagttcaaat | tcaccttgaa  | tactgagaac  | aactttaccc | tcacggataa  | tcacgataac  | 1620 |
| acggccaaca | tcacagtcaa  | gtatgggcag  | tttgaccggg | agcataccaa  | ggtccacttc  | 1680 |
| ctacccgtgg | tcattctcaga | caatgggatg  | ccaagtcgca | cgggcaccag  | cacgctgacc  | 1740 |
| gtggccgtgt | gcaagtgcaa  | cgagcagggc  | gagttcacct | tctgcgagga  | tatggccggc  | 1800 |
| caggtgggcg | tgagcatcca  | ggcagtggtg  | gccatcttac | tctgcctcct  | caccatcaca  | 1860 |
| gtgatcacc  | tgtcatctt   | cctgcggcgg  | cggctccgga | agcaggcccg  | cgcgcacggc  | 1920 |
| aagagcgtgc | cggagatcca  | cgagcagctg  | gtcacctacg | acgaggaggg  | cggcggcgag  | 1980 |
| atggacacca | ccagctacga  | tgtgtcgggtg | ctcaactcgg | tgcgccggcg  | cggggccaag  | 2040 |
| cccccgcggc | ccgcgctgga  | cgcccgccct  | tcctctatg  | cgcagggtgca | gaagccaccg  | 2100 |
| aggcacgcgc | ctggggcaca  | cggagggccc  | ggggagatgg | cagccatgat  | cgagggtgaag | 2160 |
| aaggacgagg | cggaccacga  | cggcgacggc  | ccccctacg  | acacgctgca  | catctacggc  | 2220 |
| tacgagggct | ccgagtccat  | agccgagctc  | ctcagctccc | tgggcaccga  | ctcatccgac  | 2280 |
| tctgacgtgg | attacgactt  | ccttaacgac  | tggggaccca | ggtttaagat  | gctggctgag  | 2340 |
| ctgtacggct | cggacccccg  | ggaggagctg  | ctgtattagg | cggccgagggt | cactctgggc  | 2400 |
| ctggggaccc | aaacccccctg | cagcccaggc  | cagtcagact | ccaggcacca  | cagcctccaa  | 2460 |
| aaatggcagt | gactccccag  | cccagcacc   | cttctcctg  | ggtcccagag  | acctcatcag  | 2520 |
| ccttgggata | gcaaactcca  | ggttctctgaa | atatccagga | atatagtca   | gtgagtacta  | 2580 |
| ttctcaaatg | ctggcaaatc  | caggctggtg  | ttctgtctgg | gtcagacat   | ccacataacc  | 2640 |
| ctgtcaccca | cagaccggcg  | tctaactcaa  | agacttcctc | tggctcccca  | aggctgcaaa  | 2700 |
| gcaaaacaga | ctgtgtttta  | ctgctgcagg  | gtctttttct | agggtccctg  | aacgccttgg  | 2760 |
| taaggctggg | gaggctcctgg | tgccatatctg | cctggaggca | aaggcctgga  | cagcttgact  | 2820 |
| tgtggggcag | gattctctgc  | agcccatctc  | caaggagac  | tgaccatcat  | gccctctctc  | 2880 |
| gggagcccta | gccctgctcc  | aactccatac  | tccactccaa | gtgccccacc  | actccccaac  | 2940 |

|             |             |             |            |             |            |      |
|-------------|-------------|-------------|------------|-------------|------------|------|
| ccctctccag  | gcctgtcaag  | agggaggaag  | gggccccatg | gcagctcctg  | accttgggtc | 3000 |
| ctgaagtgac  | ctcactggcc  | tgccatgcca  | gtaactgtgc | tgtactgagc  | actgaaccac | 3060 |
| attcagggaa  | atgcttatta  | aaccttgaag  | caactgtgaa | ttcattctgg  | aggggcagtg | 3120 |
| gagatcagga  | gtgacagatc  | acaggggtgag | ggccacctcc | acacccaccc  | cctctggaga | 3180 |
| aggcctggaa  | gagctgagac  | cttgctttga  | gactcctcag | cacccctcca  | gttttgctg  | 3240 |
| agaaggggca  | gatgttccc   | gagatcagaa  | gacgtctccc | cttctctgce  | tcacctggtc | 3300 |
| gccaatccat  | gctctctttc  | ttttctctgt  | ctactcctta | tcccttggtt  | tagaggaacc | 3360 |
| caagatgtgg  | ccttttagcaa | aactgacaat  | gtccaaaccc | actcatgact  | gcatgacgga | 3420 |
| gccgagcatg  | tgtctttaca  | cctcgctgtt  | gtcacatctc | agggaaactga | ccctcaggca | 3480 |
| caccttgacg  | aaggaaggcc  | ctgccctgcc  | caacctctgt | ggtcacccat  | gcatcattcc | 3540 |
| actggaacgt  | ttcactgcaa  | acacaccttg  | gagaagtggc | atcagtcaac  | agagaggggc | 3600 |
| aggggaaggag | acaccaagct  | cacctctcgt  | catggaccga | ggttcccact  | ctggcaaagc | 3660 |
| ccctcacact  | gcaagggatt  | gtagataaca  | ctgacttggt | tgttttaacc  | aataactagc | 3720 |
| ttcttataat  | gattttttta  | ctaatagatac | ttacaagttt | ctagctctca  | cagacatata | 3780 |
| gaataagggt  | ttttgcataa  | taagcaggtt  | gttatttagg | ttaacaatat  | taattcaggt | 3840 |
| tttttaggtg  | gaaaaacaat  | tctgttaacc  | ttctattttc | tataattgta  | gtaattgctc | 3900 |
| tacagataat  | gtctatata   | tggccaaact  | ggtgcatgac | aagtactgta  | tttttttata | 3960 |
| cctaaataaa  | gaaaaatctt  | tagcctgggc  | aacaaaaaaa |             |            | 4000 |

&lt;210&gt; 33

&lt;211&gt; 3432

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 33

|            |             |            |             |            |             |      |
|------------|-------------|------------|-------------|------------|-------------|------|
| actccagcgc | gcggctacct  | acgcttggtg | cttgctttct  | ccagccatcg | gagaccagag  | 60   |
| ccgccccctc | tgctcgagaa  | aggggctcag | cgggcgcgga  | agcggagggg | gaccaccgtg  | 120  |
| gagagcgcg  | tcccagccc   | gccactgcgg | atccctgaaa  | ccaaaaagct | cctgctgctt  | 180  |
| ctgtacccc  | cctgtccctc  | ccagctgcgc | agggccccct  | cgtgggatca | tcagcccga   | 240  |
| gacagggatg | gagaggcctc  | tgtgtctcca | cctctgcagc  | tgctgggcta | tgctggccct  | 300  |
| cctgtccccc | ctgagcctgg  | cacagtatga | caagctggccc | cattacccc  | agttactcca  | 360  |
| gcaaccggct | cctgagtatc  | accagcccca | ggcccccgcc  | aacgtggcca | agattcagct  | 420  |
| gcgcctggct | gggcagaaga  | ggaagcacag | cgaggggcgg  | gtggaggtgt | actatgatgg  | 480  |
| ccagtggggc | accgtgtgcg  | atgacgactt | ctccatccac  | gctgcccacg | tcgtctgccg  | 540  |
| ggagctgggc | tatgtggagg  | ccaagtccct | gactgccagc  | tcctcctacg | gcaagggaga  | 600  |
| agggcccatc | tggttagaca  | atctccactg | tactggcaac  | gaggcgaccc | ttgcagcatg  | 660  |
| cacctccaat | ggctggggcg  | tcactgactg | caagcacacg  | gaggatgtcg | gtgtggtgtg  | 720  |
| cagcgacaaa | aggattcctg  | ggttcaaatt | tgacaattcg  | ttgatcaacc | agatagagaa  | 780  |
| cctgaatatc | caggtggagg  | acattcggat | tcgagccatc  | ctctcaacct | accgcaagcg  | 840  |
| caccccagtg | atggagggct  | acgtggaggt | gaaggagggc  | aagacctgga | agcagatctg  | 900  |
| tgacaagcac | tggacggcca  | agaattccc  | cgtgggtctg  | ggcatgtttg | gcttccctgg  | 960  |
| ggagaggaca | tacaatacca  | aagtgtacaa | aatgtttgcc  | tcacggagga | agcagcgcta  | 1020 |
| ctggccatct | tccattggact | gcaccggcac | agagggccac  | atctccagct | gcaagctggg  | 1080 |
| cccccagggt | tcactggacc  | ccatgaagaa | tgtaacctgc  | gagaatgggc | tgccggccgt  | 1140 |
| ggtgagttgt | gtgcctgggc  | aggtcttcag | ccctgacgga  | ccctcgagat | tcgggaaagc  | 1200 |
| atacaagcca | gagcaacccc  | tggtgcgact | gagaggcggt  | gcctacatcg | gggagggccg  | 1260 |
| cgtggaggtg | ctcaaaaatg  | gagaatgggg | gaccgtctgc  | gacgacaagt | gggacctggt  | 1320 |
| gtcggccagt | gtggtctgca  | gagagctggg | ctttgggagt  | gccaaagagg | cagtcactgg  | 1380 |
| ctcccgactg | gggcaaggga  | tcggacccat | ccacctcaac  | gagatccagt | gcacaggcaa  | 1440 |
| tgagaagtcc | attatagact  | gcaagttcaa | tgccgagttc  | cagggctgca | accacgagga  | 1500 |
| ggatgctggt | gtgagatgca  | acacccctgc | catgggcttg  | cagaagaagc | tcgcctgaa   | 1560 |
| cggcgggcgc | aatccctacg  | agggccgagt | ggaggtgctg  | gtggagagaa | acgggtccct  | 1620 |
| tgtgtggggg | atggtgtgtg  | gccaaaactg | gggcatcgtg  | gaggccatgg | tggtctgccg  | 1680 |
| ccagctgggc | ctgggattcg  | ccagcaacgc | cttccaggag  | acctggtatt | ggcaggaga   | 1740 |
| tgtaacacgc | aacaaagtgg  | tcagtgtgag | agtgaagtgc  | tcgggaacgg | agctgtccct  | 1800 |
| ggcgactgc  | gcgccagacg  | gggaggacgt | ggcctgcccc  | cagggcgagg | tgacgtacgg  | 1860 |
| ggccggagtt | gcctgctcag  | aaaccgcccc | tgacctgggtc | ctcaatgcgg | agatgggtgca | 1920 |
| gcagaccacc | tacctggagg  | accggcccat | gttcattgctg | cagtgtgcca | tgaggagaaa  | 1980 |
| ctgcctctcg | gcctcagccg  | cgcagaccga | ccccaccacg  | ggctaccgcc | ggctcctgcg  | 2040 |
| cttctcctcc | cagatccaca  | acaatggcca | gtccgacttc  | cggcccaaga | acggccgcca  | 2100 |
| cgcgtggatc | tggcacgact  | gtcacaggca | ctaccacagc  | atggaggtgt | tcaccacta   | 2160 |

|             |            |            |            |             |             |      |
|-------------|------------|------------|------------|-------------|-------------|------|
| tgacctgctg  | aacctcaatg | gcaccaaggt | ggcagagggc | cacaaggcca  | gcttctgctt  | 2220 |
| ggaggacaca  | gaatgtgaag | gagacatcca | gaagaattac | gagtggtgcca | acttcggcga  | 2280 |
| tcagggcatc  | accatgggct | gctgggacat | gtaccgccat | gacatcgact  | gccagtgggt  | 2340 |
| tgacatcaact | gacgtgcccc | ctggagacta | cctgttccag | gttggtatta  | accccaactt  | 2400 |
| cgaggttgca  | gaatccgatt | actccaacaa | catcatgaaa | tgcaggagcc  | gctatgacgg  | 2460 |
| ccaccgcac   | tggatgtaca | actgccacat | aggtggttcc | ttcagcgaag  | agacggaaaa  | 2520 |
| aaagtttgag  | cacttcagcg | ggctcttaaa | caaccagctg | tccccgcagt  | aaagaagcct  | 2580 |
| gcgtgggtcaa | ctcctgtctt | caggccacac | cacatcttcc | atgggacttc  | cccccaacaa  | 2640 |
| ctgagtctga  | acgaatgcca | cgtgccctca | cccagcccg  | ccccaccct   | gtccagaccc  | 2700 |
| ctacagctgt  | gtctaagctc | aggaggaaa  | ggaccctccc | atcattcatg  | gggggctgct  | 2760 |
| acctgaccct  | tggggcctga | gaaggccttg | gggggggtgg | gtttgtccac  | agagctgctg  | 2820 |
| gagcagcacc  | aagagccagt | cttgaccggg | atgaggccca | cagacagggt  | gtcatcagct  | 2880 |
| tgtcccattc  | aagccaccga | gctcaccaca | gacacagtgg | agccgcgctc  | ttctccagt   | 2940 |
| acacgtggac  | aaatgcgggc | tcatcagccc | ccccagagag | ggtcaggccg  | aaccccat    | 3000 |
| ctcctcctct  | taggtcattt | tcaacaaact | tgaatatcta | gacctctctt  | ccaatgaaac  | 3060 |
| cctccagtct  | attatagtca | catagataat | ggtgccacgt | gttttctgat  | ttggtgagct  | 3120 |
| cagacttggt  | gcttccctct | ccacaacccc | cacctcttgt | ttttcaagat  | actattatta  | 3180 |
| tattttcaca  | gacttttgaa | gcacaaat   | attggcattt | aatattggac  | atctgggccc  | 3240 |
| ttggaagtac  | aaatctaagg | aaaaaccaac | ccactgtgta | agtgactcat  | cttcctgttg  | 3300 |
| ttccaattct  | gtgggttttt | gattcaacgg | tgtataaacc | agggtcctgg  | gtgacagggc  | 3360 |
| gctcactgag  | caccatgtgt | catcacagac | acttacacat | acttgaaact  | tgggaataaaa | 3420 |
| gaaagattta  | tg         |            |            |             |             | 3432 |

&lt;210&gt; 34

&lt;211&gt; 3845

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 34

|            |             |            |            |             |            |      |
|------------|-------------|------------|------------|-------------|------------|------|
| cgctcgctct | ggctggcctg  | ggctggcctc | tggagtatgg | tctggcgggg  | gccccctttc | 60   |
| ttgctcccc  | tctcttctt   | ggcttctcat | gtgggcgcgg | cggtggacct  | gacgctgctg | 120  |
| gccaacctgc | ggctcacgga  | ccccagcgc  | ttcttctga  | cttgctgtgc  | tggggaggcc | 180  |
| ggggcgggga | ggggctcgga  | cgcctggggc | ccgccccctg | tgctggagaa  | ggacgaccgt | 240  |
| atcggtgcga | ccccgcggg   | gccacccctg | cgctggcg   | gcaacgggtc  | gcaccaggct | 300  |
| acgcttcg   | gcttctccaa  | gccctcgga  | ctcgtggcg  | tcttctctg   | cgtgggcggg | 360  |
| gctggggcg  | ggcgacgcg   | cgtcatctac | gtgcacaaca | gccctggagc  | ccacctgctt | 420  |
| ccagacaagg | tcacacacac  | tgtgaacaaa | ggtgacaccg | ctgtactttc  | tgcacgtgtg | 480  |
| cacaaggaga | agcagacaga  | cgtgatctgg | aagagcaacg | gatcctactt  | ctacaccctg | 540  |
| gactggcatg | aagcccagga  | tgggcgggtc | ctgctgcagc | tcccaaagt   | gcagccacca | 600  |
| tgcagcggca | tctacagtgc  | cacttacctg | gaagccagcc | ccctgggcag  | cgccttcttt | 660  |
| cggctcatcg | tgcgggggtg  | tggggctggg | cgctgggggc | caggctgtac  | caaggagtgc | 720  |
| ccaggttgcc | tacatggagg  | tgtctgccac | gaccatgacg | gcgaatgtgt  | atgccccctt | 780  |
| ggcttcactg | gcaccgcgtg  | tgaacaggcc | tgcagagagc | gccgttttgg  | gcagagctgc | 840  |
| caggagcagt | gcccaggcat  | atcaggctgc | cggggcctga | ccttctgcct  | cccagacccc | 900  |
| tatggctgct | cttgtggatc  | tggctggaga | ggaagccagt | gccaaagaagc | ttgtgcccc  | 960  |
| ggtcattttg | gggctgattg  | cgcactccag | tgccagtgtc | agaatgggtg  | cacttgtgac | 1020 |
| cggttcagt  | gttgtgtctg  | cccctctggg | tggcatggag | tgcactgtga  | gaagtcagac | 1080 |
| cggatcccc  | agatcctcaa  | catggcctca | gaactggagt | tcaacttaga  | gacgatgcc  | 1140 |
| cggatcaact | gtgcagctgc  | agggaacccc | ttccccgtgc | ggggcagcat  | agagctacgc | 1200 |
| aagccagacg | gcactgtgct  | cctgtccacc | aaggccattg | tggagccaga  | gaagaccaca | 1260 |
| gctgagttcg | aggtgccccg  | cttggttctt | gcggacagt  | ggttctggga  | gtgccgtgtg | 1320 |
| tccacatctg | gcggccaaga  | cagccggcgc | ttcaaggctc | atgtgaaagt  | gccccccgtg | 1380 |
| cccctggctg | cacctcggtc  | cctgaccaag | cagagccgcc | agcttgtggt  | ctccccgtg  | 1440 |
| gtctcgttct | ctggggatgg  | acccatctcc | actgtccgcc | tgcactaccg  | gccccaggac | 1500 |
| agtaccatgg | actggctgac  | cattgtggtg | gaccccgctg | agaacgtgac  | gttaatgaac | 1560 |
| ctgaggccaa | agacaggata  | cagtgttcgt | gtgcagctga | gccggccagg  | ggaaggagga | 1620 |
| gagggggcct | agggggcctcc | caccctcatg | accacagact | gtcctgagcc  | tttgtgtcag | 1680 |
| ccgtgggttg | agggctggca  | tgtggaaggc | actgaccggc | tgcgagttag  | ctggctcctg | 1740 |
| cccttggtgc | ccgggccact  | ggtgggcgac | ggtttctctg | tgcgctgtg   | ggacgggaca | 1800 |
| cgggggcagg | agcggcgagg  | gaacgtctca | tccccccagg | cccgcactgc  | cctcctgacg | 1860 |
| ggactcacgc | ctggcaccca  | ctaccagctg | gatgtgcagc | tctaccactg  | caccctcctg | 1920 |

|             |             |             |             |             |             |      |
|-------------|-------------|-------------|-------------|-------------|-------------|------|
| ggccccggcct | cgccccctgc  | acacgtgctt  | ctgcccccca  | gtggggcctcc | agccccccga  | 1980 |
| cacctccacg  | cccaggccct  | ctcagactcc  | gagatccagc  | tgacatggaa  | gcaccccgag  | 2040 |
| gctctgcctg  | ggccaatatc  | caagtacgtt  | gtggagggtgc | aggtggctgg  | gggtgcagga  | 2100 |
| gacccactgt  | ggatagacgt  | ggacaggcct  | gaggagacaa  | gcaccatcat  | ccgtggcctc  | 2160 |
| aacgccagca  | cgcgctacct  | cttcgcgatg  | cgggccagca  | ttcagggggt  | cggggactgg  | 2220 |
| agcaacacag  | tagaagagtc  | caccctgggc  | aacgggctgc  | aggctgaggg  | cccagtccaa  | 2280 |
| gagagccggg  | cagctgaaga  | gggcctggat  | cagcagctga  | tcctggcggt  | ggtgggctcc  | 2340 |
| gtgtctgcca  | cctgcctcac  | catcctggcc  | gcccttttaa  | ccctgggtgtg | catccgcaga  | 2400 |
| agctgcctgc  | atcggagacg  | caccttcacc  | taccagtcag  | gctcgggcga  | ggagaccatc  | 2460 |
| ctgcagttca  | gctcagggac  | cttgacactt  | accgggcggc  | caaaactgca  | gcccagagccc | 2520 |
| ctgagctacc  | cagtgtctaga | gtgggaggac  | atcacctttg  | aggacctcat  | cggggagggg  | 2580 |
| aacttcggcc  | aggctcatccg | ggccatgatc  | aagaaggacg  | ggctgaagat  | gaacgcagcc  | 2640 |
| atcaaaatgc  | tgaaagagta  | tgcctctgaa  | aatgaccatc  | gtgactttgc  | gggagaactg  | 2700 |
| gaagttctgt  | gcaaattggg  | gcatcacccc  | aacatcatca  | acctcctggg  | ggcctgtaag  | 2760 |
| aaccgaggtt  | acttgtatat  | cgctattgaa  | tatgccccct  | acgggaacct  | gctagatttt  | 2820 |
| ctgcggaaaa  | gccgggtcct  | agagactgac  | ccagcttttg  | ctcgagagca  | tgggacagcc  | 2880 |
| tctaccctta  | gctcccggca  | gctgctgcgt  | ttcgccagtg  | atgcggccaa  | tggcatgcag  | 2940 |
| tacctgagtg  | agaagcagtt  | catccacagg  | gacctggctg  | cccggaatgt  | gctggctcga  | 3000 |
| gagaacctag  | cctccaagat  | tgcagacttc  | ggcctttctc  | ggggagagga  | ggtttatgtg  | 3060 |
| aagaagacga  | tggggcgctc  | ccctgtgcgc  | tggatggcca  | ttgagtcctt  | gaactacagt  | 3120 |
| gtctatacca  | ccaagagtga  | tgtctgggtc  | tttggagtc   | ttctttggga  | gatagtgagc  | 3180 |
| cttggaggta  | caccctactg  | tggcatgacc  | tgtgccgagc  | tctatgaaaa  | gctgccccag  | 3240 |
| ggctaccgca  | tggagcagcc  | tcgaaaactgt | gacgatgaag  | tgtacgagct  | gatgcgtcag  | 3300 |
| tgctggcggg  | accgtcccta  | tgagcgaccc  | ccctttgccc  | agattgcgct  | acagctaggc  | 3360 |
| cgcatgctgg  | aagccaggaa  | ggcctatgtg  | aacatgtcgc  | tgtttgagaa  | cttcacttac  | 3420 |
| gcgggcatgt  | atgccacagc  | tgaggaggcc  | tgagctgcca  | tccagccaga  | acgtggctct  | 3480 |
| gctggccgga  | gcaaactctg  | ctgtctaac   | tgtgaccagt  | ctgaccctta  | cagcctctga  | 3540 |
| cttaagctgc  | ctcaagggaat | ttttttaact  | taaggagaa   | aaaaagggat  | ctggggatgg  | 3600 |
| ggtgggctta  | ggggaaactgg | gttcccatgc  | tttgtaggtg  | tctcatagct  | atcctgggca  | 3660 |
| tccttccttc  | tagttcagct  | gccccacagg  | tgtgtttccc  | atcccactgc  | tcccccaaca  | 3720 |
| caaaccccca  | ctccagctcc  | ttcgcttaag  | ccagcactca  | caccactaac  | atgccctggt  | 3780 |
| cagctactcc  | cactcccggc  | ctgtcattca  | gaaaaaaaata | aatgtttctaa | taagctccaa  | 3840 |
| aaaaa       |             |             |             |             |             | 3845 |

<210> 35  
 <211> 1645  
 <212> DNA  
 <213> Homo sapiens

|            |             |            |            |            |             |      |
|------------|-------------|------------|------------|------------|-------------|------|
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| gggattcggg | ccgcccagct  | acgggaggac | ctggagtggc | actgggcgcc | cgacggacca  | 60   |
| tccccgggac | ccgcctgccc  | ctcggcgccc | cgccccgccc | ggcgcgtccc | cgtcgggttc  | 120  |
| cccagccaca | gccttaccta  | cgggctcctg | actccgcaag | gcttcagaa  | gatgctcgaa  | 180  |
| ccaccggcgc | gggcctcggg  | gcagcagtga | gggaggcgtc | cagcccccca | ctcagctctt  | 240  |
| ctcctcctgt | gccagggggt  | ccccggggga | tgagcatggg | ggttttccct | cggagccccc  | 300  |
| tggctcggga | cgtctgagaa  | gatgccggtc | atgaggctgt | tccttgctt  | cctgcagctc  | 360  |
| ctggccgggc | tggcgctgcc  | tgctgtgccc | ccccagcagt | gggccttgct | tgctgggaac  | 420  |
| ggctcgtcag | agggtggaagt | ggtacccttc | caggaagtgt | ggggccgcag | ctactgccgg  | 480  |
| gcgctggaga | ggctggtgga  | cgctcgtgct | gagtacccca | gcgagggtga | gcacatgttc  | 540  |
| agcccatcct | gtgtctccct  | gctgcgctgc | accggctgct | gcggcgatga | gaatctgcac  | 600  |
| tgtgtgccgg | tggagacggc  | caatgtcacc | atgcagctcc | taaagatccg | ttctggggac  | 660  |
| cggccctcct | acgtggagct  | gacgttctct | cagcacgttc | gctgcgaatg | ccggcctctg  | 720  |
| cgggagaaga | tgaagccgga  | aagggtgcgg | gatgctgttc | cccggaggta | accacccctt  | 780  |
| tggaggagag | agaccccgca  | cccggctcgt | gtatttatta | ccgtcacact | cttcagtgc   | 840  |
| tcctgctggt | acctgccttc  | tatttattag | ccaactgttt | ccctgctgaa | tgccctcgctc | 900  |
| ccttcaagac | gaggggcagg  | gaaggacagg | accctcagga | attcagtgcc | ttcaacaacg  | 960  |
| tgagagaaag | agagaagcca  | gccacagacc | cctgggagct | tccgctttga | aagaagcaag  | 1020 |
| acacgtggcc | tcgtgagggg  | caagctagcc | cccagaggcc | ctggagggtc | ccaggggcct  | 1080 |
| gcagaaggaa | agaagggggc  | cctgctacct | gttcttgggc | ctcaggctct | gcacagacaa  | 1140 |
| gcagcccttg | ctttcggagc  | tcctgtccaa | agtagggatg | cggattctgc | tggggccgcc  | 1200 |
| acggcctggt | ggtgggaagg  | ccggcagcgg | gcggagggga | ttcagccact | tccccctctt  | 1260 |



|            |            |            |            |            |            |      |
|------------|------------|------------|------------|------------|------------|------|
| cttctgaaga | tcagaacatt | cagctctgga | gaacagtgg  | tgcctggggg | cttttgccac | 1320 |
| tccttgccc  | ccgtgatctc | ccctcacact | ttgccatttg | cttgtactgg | gacattgttc | 1380 |
| tttccggccg | aggtgccacc | accctgcccc | cactaagaga | cacatacaga | gtgggccccg | 1440 |
| ggctggagaa | agagctgcct | ggatgagaaa | cagctcagcc | agtggggatg | aggtcaccag | 1500 |
| gggaggagcc | tgtgcgtccc | agctgaaggc | agtggcaggg | gagcaggttc | cccaagggcc | 1560 |
| ctggcacc   | cacaagctgt | ccctgcaggg | ccatctgact | gccaagccag | attctcttga | 1620 |
| ataaagtatt | ctagtgtgga | aacgc      |            |            |            | 1645 |

<210> 36  
 <211> 4829  
 <212> DNA  
 <213> Homo sapiens

|             |            |             |             |             |            |      |
|-------------|------------|-------------|-------------|-------------|------------|------|
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| atggaggggg  | accgggtggc | cgggcgggcg  | gtgctgtcgt  | cgttaccagt  | gctactgctg | 60   |
| ctgcagttgc  | taatgttgcg | ggccgcggcg  | ctgcacccag  | acgagctctt  | cccacacggg | 120  |
| gagtcgtgg   | gggaccagct | cctgcaggaa  | ggcgacgacg  | taaagctcag  | ccgtggtgaa | 180  |
| gctggcgaat  | cccctgcact | tcttacgaag  | cccgattcag  | caacctctac  | gtgggcacca | 240  |
| acggcatcat  | ctccactcag | gacttcccca  | gggaaacgca  | gtatgtggac  | tatgatttcc | 300  |
| ccaccgactt  | cccggccatc | gccccctttc  | tggcggacat  | cgacacgagc  | cacggcagag | 360  |
| gccgagtcct  | gtaccgagag | gacacctccc  | ccgcagtgtc  | gggcctggcc  | gccccgtatg | 420  |
| tgcgcgctgg  | cttcccgcgc | tctgcgcgct  | ttttaccccc  | accacgcctt  | tcctggccac | 480  |
| ctggggagcag | gtaggcgctt | acgaggaggt  | caaacgcggg  | cgctgccctc  | gggagagctg | 540  |
| aacactttcc  | aggcagtttt | ggcatctgat  | gggtctgata  | gctacgccct  | ctttctttat | 600  |
| cctgccaaag  | gcctgcagtt | ccttggaacc  | cgccccaaag  | agtcttataa  | tgtccagctt | 660  |
| cagcttccag  | ctcgggtggg | cttctgccga  | ggggaggctg  | atgatctgaa  | gtcagaagga | 720  |
| ccatatttca  | gcttgactag | cactgaacag  | tctgtgaaaa  | atctctatca  | actaagcaac | 780  |
| ctggggatcc  | ctggagtgtg | ggctttccat  | atcggcagca  | cttccccggt  | ggacaatgtc | 840  |
| aggccagctg  | cagttggaga | cctttccgct  | gcccactctt  | ctgttcccc   | gggacgttcc | 900  |
| ttcagccatg  | ctacagccct | ggaaagtgtg  | tataatgagg  | acaatttgga  | ttactacgat | 960  |
| gtgaatgagg  | aggaagctga | ataccttccg  | ggtgaaccag  | aggaggcatt  | gaatggccac | 1020 |
| agcagcattg  | atgtttccct | ccaatccaaa  | gtggatacaa  | agcctttaga  | ggaatcttcc | 1080 |
| accttgatc   | ctcacacca  | agaaggaaca  | tctctgggag  | aggtaggggg  | cccagattta | 1140 |
| aaaggccaag  | ttgagccctg | ggatgagaga  | gagaccagaa  | gccagctccc  | accagaggta | 1200 |
| gacagagatt  | cactggctcc | ttcctgggaa  | acccccacc   | cgtaccccca  | aaacggaagc | 1260 |
| atccagccct  | accagatgg  | agggccagtg  | ccttcggaaa  | tggatgttcc  | cccagctcat | 1320 |
| cctgaagaag  | aaattgttct | tcgaagttag  | cctgcttcag  | gtcacactac  | acccttaagt | 1380 |
| cgagggacgt  | atgaggtggg | actggaagac  | aacatagggt  | ccaacaccga  | ggtcttcacg | 1440 |
| tataatgctg  | ccaacaagga | aacctgtgaa  | cacaaccaca  | gacaatgtct  | ccggcatgcc | 1500 |
| ttctgcacgg  | actatgccac | tggcttctgc  | tgccactgcc  | aatccaagtt  | ttatggaaat | 1560 |
| gggaagcact  | gtctgcctga | gggggcacct  | caccgagtga  | atgggaaagt  | gagtggccac | 1620 |
| ctccacgtgg  | gccatacacc | cgtgcacttc  | actgatgtgg  | acctgcatgc  | gtatatcgtg | 1680 |
| ggcaatgatg  | gcagagccct | cacggccatc  | agccacatcc  | cacagccagc  | agcccaggcc | 1740 |
| ctcctcccc   | tcacaccaat | tggaggcctg  | tttggctggc  | tctttgcttt  | agaaaaacct | 1800 |
| ggctctgaga  | acggcttcag | cctcgcaggt  | gctgccttta  | cccatgacat  | ggaagttaga | 1860 |
| ttctaccg    | gagaggagac | ggttcgtatc  | actcaaaactg | ctgagggact  | tgaccagag  | 1920 |
| aactacctga  | gcattaagac | caacattcaa  | ggccaggtgc  | cttacgtccc  | agcaaatttc | 1980 |
| acagcccaca  | tctctcccta | caaggagctg  | taccactact  | ccgactccac  | tgtgacctct | 2040 |
| acaagtcca   | gagactactc | tctgactttt  | ggtgcaatca  | accaaactg   | gtcctaccgc | 2100 |
| atccaccaga  | acatcactta | ccaggtgtgc  | aggcacgccc  | ccagacaccc  | gtccttcccc | 2160 |
| accaccagc   | agctgaacgt | ggaccgggtc  | tttgccttgt  | ataatgatga  | agaaagagtg | 2220 |
| cttagatttg  | ctgtgaccaa | tcaaattggc  | ccggctcaaag | aagattcaga  | ccccactccg | 2280 |
| gtgaatcctt  | gctatgatgg | gagccacatg  | tgtgacacaa  | cagcacgggtg | ccatccaggg | 2340 |
| acaggtgtag  | attacacctg | tgagtgcgca  | tctgggtacc  | agggagatgg  | acggaactgt | 2400 |
| gtggatgaaa  | atgaatgtgc | aactggcttt  | catcgctgtg  | gccccaaactc | tgtatgtatc | 2460 |
| aacttgcttg  | gaagctacag | gtgtgagtgc  | cggagtgggt  | atgagtttgc  | agatgaccgg | 2520 |
| catacttgca  | tcttgatcac | cccacctgcc  | aacccctgtg  | aggatggcag  | tcatacctgt | 2580 |
| gctcctgctg  | ggcaggcccg | gtgtgttccac | catggaggca  | gcacgttcag  | ctgtgcctgc | 2640 |
| ctgcctgggt  | atgccggcga | tgggcaccag  | tgcactgatg  | tagatgaatg  | ctcagaaaac | 2700 |
| agatgtcacc  | ctgcagctac | ctgtacaat   | actcctgggt  | ccttctcctg  | ccgttgtcaa | 2760 |
| cccgatatt   | atggggatgg | atttcagtg   | atacctgact  | ccacctcaag  | cctgacaccc | 2820 |

|             |             |             |             |            |             |      |
|-------------|-------------|-------------|-------------|------------|-------------|------|
| tgtgaacaac  | agcagcgcca  | tgcccaggcc  | cagtatgcct  | accctggggc | ccggttccac  | 2880 |
| atcccccaat  | gcgacgagca  | gggcaacttc  | ctgcccctac  | agtgtcatgg | cagcactggg  | 2940 |
| ttctgctggg  | gcgtggaccc  | tgatgggtcat | gaagttcctg  | gtacccagac | tccacctggc  | 3000 |
| tccaccccg   | ctcactgtgg  | accatcacca  | gagccacccc  | agaggccccc | gacctctgt   | 3060 |
| gagcgctgga  | gggaaaacct  | gctggagcac  | tacggtggca  | cccccgaga  | tgaccagtac  | 3120 |
| gtgccccagt  | gcatgacct   | gggccacttc  | atccccctgc  | agtgccacgg | aaagagcgac  | 3180 |
| ttctgctggg  | gtgtggacaa  | agatggcaga  | gaggtgcagg  | gcacccgctc | ccagccaggc  | 3240 |
| accacccctg  | cgtgtatacc  | caccgtcgct  | ccacccatgg  | tccggcccac | gccccggcca  | 3300 |
| gatgtgaccc  | ctccatctgt  | gggcaccttc  | ctgctctata  | ctcagggcca | gcagattggc  | 3360 |
| tacttacc    | tcaatggcac  | caggcttcag  | aaggatgcag  | ctaagaccct | gctgtctctg  | 3420 |
| catggctcca  | taatcgtagg  | aattgattac  | gactgccggg  | agaggatggg | gtactggaca  | 3480 |
| gatgttgctg  | gacggacaat  | cagccgtgcc  | ggctctggaac | tgggagcaga | gcctgagacg  | 3540 |
| atcgtgaatt  | caggtctgat  | aagccctgaa  | ggacttgcca  | tagaccacat | ccgcagaaca  | 3600 |
| atgtactgga  | cggacagtgt  | cctggataag  | atagagagcg  | ccctgctgga | tggctctgag  | 3660 |
| cgcaagggtcc | tcttctacac  | agatctgggtg | aatccccgtg  | ccatcgctgt | ggatccaatc  | 3720 |
| cgaggcaact  | tgtactggac  | agactggaat  | agagaagctc  | ctaaaattga | aacgtcatct  | 3780 |
| ttagatggag  | aaaacagaag  | aattctgatc  | aatacagaca  | ttggattggc | caatggctta  | 3840 |
| acctttgacc  | ctttctctaa  | actgctctgc  | tgggcagatg  | caggaaccaa | aaaactggag  | 3900 |
| tgtacactac  | ctgatggaac  | tggacggcgt  | gtcattcaaa  | acaacctcaa | gtacctcttc  | 3960 |
| agcatcgtaa  | gctatgcaga  | tcacttctac  | cacacagact  | ggaggaggga | tgggtgttgta | 4020 |
| tcagtaataa  | aacatagtgg  | ccagtttact  | gatgagtatc  | tcccagaaca | acgatctcac  | 4080 |
| ctctacggga  | taactgcagt  | ctacccctac  | tgcccaacag  | gaagaaagta | agtacagtaa  | 4140 |
| tgtaaaggaa  | gacttgaggt  | ttacaatcag  | aacctggacc  | ctaaagaaca | gtgactgcaa  | 4200 |
| aggcaaagaa  | agtaaaaaag  | gaattggcca  | ttagacgttc  | ctgagcatcc | aagatgaaca  | 4260 |
| ttttgtagtg  | caaaaagact  | tttgtgaaaa  | gctgatacct  | caatctttac | tactgtatct  | 4320 |
| ttaaaaatga  | aggttggttat | tgcaagttaa  | aaaaggtaac  | agaattttta | ctggttgctta | 4380 |
| ttaaagcaac  | ttcttgtaaa  | catttatcat  | taatatttaa  | aagatcaaat | tcattcaact  | 4440 |
| aagaattaga  | gtttaagact  | ctaaacctga  | tttttgccat  | ggattccttc | tggccaagaa  | 4500 |
| attaaagcac  | atgtgatcaa  | tataacaata  | taatcctaaa  | ccttgacagt | tggagaagcc  | 4560 |
| aatgcagaac  | tgatgggaaa  | ggaccaatta  | tttatagttt  | ccaacaaaa  | gttctaagat  | 4620 |
| tttttacctc  | tgcacagtg   | catttctatt  | tatatcaaaa  | ggtgctaaaa | tgattcaatt  | 4680 |
| tgcattttct  | gacccgtgag  | tgcctctata  | gaagtaccca  | cagaaagtaa | agtatcacat  | 4740 |
| ttataaattc  | caaagatgta  | acaattttta  | aattttctag  | attactccaa | taaagtgttt  | 4800 |
| taagtttaaa  | aaaaaaaaaa  | aaaaaaaaaa  |             |            |             | 4829 |

<210> 37  
 <211> 2767  
 <212> DNA  
 <213> Homo sapiens

|            |             |             |            |             |             |      |
|------------|-------------|-------------|------------|-------------|-------------|------|
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| gcggagggtg | cgtgcggggc  | gcggcgagccg | aacaaaggag | cagggggcgcc | gccgcaggga  | 60   |
| cccgccaccc | acctcccggg  | gccgcgcagc  | ggcctctcgt | ctactgccac  | catgaccgcc  | 120  |
| aacggcacag | ccgaggcggt  | gcagatccag  | ttcggcctca | tcaactgcgg  | caacaagtac  | 180  |
| ctgacggccg | aggcggttcg  | gttcaagggtg | aacgcgtccg | ccagcagcct  | gaagaagaag  | 240  |
| cagatctgga | cgtgggagca  | gccccctgac  | gaggcgggca | gcgcggccgt  | gtgcctgcgc  | 300  |
| agccacctgg | gccgctacct  | ggcgggcgac  | aaggacggca | acgtgacctg  | cgagcgcgag  | 360  |
| gtgcccggtc | ccgaactgcc  | tttctctatc  | gtggcgcacg | acgacggtcg  | ctggtcgtctg | 420  |
| cagtccgagg | cgcaccggcg  | ctacttcggc  | ggcaccgagg | accgcctgtc  | ctgcttcgcg  | 480  |
| cagacgggtg | cccccgccga  | gaagtggagc  | gtgcacatcg | ccatgcaccc  | tcaggtcaac  | 540  |
| atctacagt  | tcacccgtaa  | gcgctacgcg  | cacctgagcg | cgcgggccggc | cgacgagatc  | 600  |
| gccgtggacc | gcgacgtgcc  | ctggggcgtc  | gactcgctca | tcacctcgc   | cttccaggac  | 660  |
| cagcgctaca | gcgtgcagac  | cgccgaccac  | cgcttcctgc | gccacgacgg  | gcgcctgggtg | 720  |
| gcgcgccccg | agccggccac  | tggctacacg  | ctggagttcc | gtccgggcaa  | ggtggccttc  | 780  |
| cgcgactgcg | agggccggtta | cctggcgccg  | tccggggcca | gcggcacgct  | caaggcgggc  | 840  |
| aaggccacca | aggtgggcaa  | ggacgagctc  | tttgctctgg | agcagagctg  | cgcccaggtc  | 900  |
| gtgtcgcagg | cggccaaacga | gaggaacgtg  | tccacgcgcc | agggatatgga | cctgtctgcc  | 960  |
| aatcaggagc | aggagaccga  | ccaggagacc  | ttccagctgg | agatcgaccg  | cgacacccaaa | 1020 |
| aagtgtgcct | tccgtaccca  | cacgggcaag  | tactggacgc | tgacggccac  | cgggggctgtg | 1080 |
| cagtccaccg | cctccagcaa  | gaatgccagc  | tgctactttg | acatcgagtg  | gcgtgaccgg  | 1140 |
| cgcacacac  | tgagggcgtc  | caatggcaag  | tttgtgacct | ccaagaagaa  | tgggcagctg  | 1200 |

|             |             |             |             |             |             |      |
|-------------|-------------|-------------|-------------|-------------|-------------|------|
| gccgcctcgg  | tggagacagc  | aggggactca  | gagctcttcc  | tcatgaagct  | catcaaccgc  | 1260 |
| cccacatcgc  | tgttccgcgg  | ggagcatggc  | ttcatcggct  | gccgcaaggt  | cacgggcacc  | 1320 |
| ctggacgcca  | accgctccag  | ctatgacgtc  | ttccagctgg  | agttcaacga  | tggcgccctac | 1380 |
| aacatcaaag  | actccacagg  | caaatactgg  | acggtgggca  | gtgactccgc  | ggtcaccagc  | 1440 |
| agcggcgaca  | ctcctgtgga  | cttcttcttc  | gagttctgcg  | actataacaa  | ggtggccatc  | 1500 |
| aaggtggggc  | ggcgctacct  | gaagggcgac  | cacgcaggcg  | tcctgaaggc  | ctcggcgga   | 1560 |
| accgtggacc  | ccgcctcgct  | ctgggagtag  | tagggccggc  | ccgtccttcc  | ccgccccctgc | 1620 |
| ccacatggcg  | gctcctgcca  | accctccctg  | ctaaccctt   | ctccgccagg  | tgggctccag  | 1680 |
| ggcggggaggc | aagccccctt  | gcctttcaaa  | ctggaaaacc  | cagagaaaaac | ggtgccccca  | 1740 |
| cctgtcgccc  | ctatggactc  | cccactctcc  | cctccgcccc  | ggttccctac  | tccccctggg  | 1800 |
| tcagcggctg  | cggcctggcc  | ctgggaggga  | tttcagatgc  | ccctgccctc  | ttgtctgcca  | 1860 |
| cggggcgaggt | ctggcacctc  | tttcttctga  | cctcagacgg  | ctctgagcct  | tatttctctg  | 1920 |
| gaagcggcta  | agggacgggt  | gggggctggg  | agccctgggc  | gtgtagtgta  | actggaatct  | 1980 |
| tttgctctc   | ccagccacct  | cctcccagcc  | ccccaggaga  | gctgggcaca  | tgtcccaagc  | 2040 |
| ctgtcagtg   | ccctccctgg  | tgcactgtcc  | ccgaaaacccc | tgcttgggaa  | gggaagctgt  | 2100 |
| cgggaggggc  | aggactgacc  | cttgtggtgt  | ttttttgggt  | ggtggctgga  | aacagccccct | 2160 |
| ctcccacgtg  | ggagaggctc  | agcctggctc  | ccttccctgg  | agcggcaggg  | cgtgacggcc  | 2220 |
| acaggggtctg | cccgtctgcac | gttctgccaa  | ggtggtggtg  | gcgggcgggt  | aggggtgtgg  | 2280 |
| gggcgctctt  | cctcctgtct  | ctttcctttc  | accctagcct  | gactggaagc  | agaaaatgac  | 2340 |
| caaatacagta | tttttttttaa | tgaaatatta  | ttgctggagg  | cgtcccaggc  | aagcctggct  | 2400 |
| gtagtagcga  | gtgatctggc  | ggggggcgctc | tcagcacctc  | ccccaggggg  | tgcattctcag | 2460 |
| ccccctcttt  | ccgtccttcc  | cgccacggcc  | cagccctggg  | cctgggctgc  | cgacacctgg  | 2520 |
| gccagagccc  | ctgctgtgat  | tgggtgctccc | tgggcctccc  | gggtggatga  | agccaggcgt  | 2580 |
| cgccccctcc  | gggagccctg  | gggtgagccg  | ccggggcccc  | cctgctgcca  | gcctcccccg  | 2640 |
| tcccaacat   | gcattctcact | ctgggtgtct  | tgggtctttta | ttttttgtaa  | gtgtcatttg  | 2700 |
| tataactcta  | aacgcccattg | atagtagctt  | caaactggaa  | atagcgaaat  | aaaataactc  | 2760 |
| agtctgc     |             |             |             |             |             | 2767 |

<210> 38  
 <211> 1284  
 <212> DNA  
 <213> Homo sapiens

|             |             |            |            |             |            |      |
|-------------|-------------|------------|------------|-------------|------------|------|
| <400> 38    |             |            |            |             |            |      |
| cagggtccgga | gcctcaactt  | caggatgttg | acaacattgc | tgccgatact  | gctgctgtct | 60   |
| ggctgggcct  | tttgtagcca  | agacgcctca | gatggcctcc | aaagacttca  | tatgctccag | 120  |
| atctcctact  | tccgcgaccc  | ctatcacgtg | tggtagcagg | gcaacgcgtc  | gctgggggga | 180  |
| cacctaacgc  | acgtgctgga  | aggcccagac | accaacacca | cgatcattca  | gctgcagccc | 240  |
| ttgcaggagc  | ccgagagctg  | ggcgcgcacg | cagagtggcc | tgcagtccta  | cctgctccag | 300  |
| ttccacggcc  | tcgtgcgcct  | ggtgcaccag | gagcggacct | tggcctttcc  | tctgaccatc | 360  |
| cgctgcttcc  | tgggctgtga  | gctgcctccc | gagggctcta | gagcccatgt  | cttcttcgaa | 420  |
| gtggctgtga  | atgggagctc  | ctttgtgagt | ttccggccgg | agagagcctt  | gtggcaggca | 480  |
| gacacccagg  | tcacctccgg  | agtggtcacc | ttcaccctgc | agcagctcaa  | tgcctacaac | 540  |
| cgcaactcgg  | atgaactgcg  | ggaattcctg | gaggacacct | gtgtgcagta  | tgtgcagaaa | 600  |
| catatttccg  | cggaaaaacac | gaaagggagc | caaacaagcc | gctcctacac  | ttcgctggct | 660  |
| ctgggcgtcc  | tgggtggcgg  | tttcatcatt | cgtggtgtgg | ctgtaggcat  | cttctgtgct | 720  |
| acaggtggac  | ggcgatgtta  | attactctcc | agccccgtca | gaaggggctg  | gattgatgga | 780  |
| ggctggcaag  | ggaaagtttc  | agctcactgt | gaagccagac | tccccaaactg | aaacaccaga | 840  |
| aggtttggag  | tgacagctcc  | tttcttctcc | cacatctgcc | cactgaagat  | ttgaggagg  | 900  |
| ggagatggag  | aggagaggtg  | gacaaagtac | ttggtttgct | aagaacctaa  | gaacgtgtat | 960  |
| gctttgctga  | attagtctga  | taagtgaatg | tttatctatc | tttgtggaaa  | acagataatg | 1020 |
| gagttggggc  | aggaagccta  | tgcgccatcc | tccaaagaca | gacagaatca  | cctgaggcgt | 1080 |
| tcaaaagata  | taaccaaata  | aacaagtcac | ccacaatcaa | aatacaacat  | tcaatacttc | 1140 |
| cagggtgtgtc | agacttgggga | tgggacgctg | atataatagg | gtagaaagaa  | gtaacacgaa | 1200 |
| gaagtgggtg  | aaatgtaaaa  | tccaagtcac | atggcagtg  | tcaattatta  | atcaattaat | 1260 |
| aatattaata  | aatttcttat  | attt       |            |             |            | 1284 |

<210> 39  
 <211> 3583  
 <212> DNA  
 <213> Homo sapiens

&lt;400&gt; 39

|             |             |             |             |             |             |      |
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| acttgcgctct | cgcctctccgg | ccaagcatgg  | ggcttcccag  | gctgggtctgc | gccttcttgc  | 60   |
| tcgccgcctg  | ctgctgctgt  | cctcgcgtcg  | cgggtgtgccc | cggagaggct  | gagcagcctg  | 120  |
| cgcctgagct  | ggtggagggtg | gaagtgggca  | gcacagccct  | tctgaagtgc  | ggcctctccc  | 180  |
| agtcccaagg  | caacctcagc  | catgtcgact  | ggttttctgt  | ccacaaggag  | aagcggacgc  | 240  |
| tcattcttccg | tgtgcgccag  | ggccagggcc  | agagcgaacc  | tggggagtac  | gagcagcggc  | 300  |
| tcagcctcca  | ggacagaggg  | gctactctgg  | ccctgactca  | agtcaccccc  | caagacgagc  | 360  |
| gcattcttctt | gtgccagggc  | aagcgccttc  | ggteccagga  | gtaccgcatc  | cagctccgcg  | 420  |
| tctacaaagc  | tccggaggag  | ccaaacatcc  | aggtaacccc  | cctgggcatc  | cctgtgaaca  | 480  |
| gtaaggagcc  | tgaggagggtc | gctacctgtg  | tagggaggaa  | cgggtacccc  | attcctcaag  | 540  |
| tcattctggta | caagaatggc  | cggcctctga  | aggaggagaa  | gaaccgggtc  | cacattcagt  | 600  |
| cgtcccagac  | tgtggagtcg  | agtggtttgt  | acaccttgca  | gagtattctg  | aaggcacagc  | 660  |
| tggttaaaga  | agacaaagat  | gccagttttt  | actgtgagct  | caactaccgg  | ctgcccagtg  | 720  |
| ggaaccacat  | gaaggagtcc  | agggaagtca  | ccgtccctgt  | tttctaccgg  | acagaaaaag  | 780  |
| tgtggctgga  | agtggagccc  | gtgggaatgc  | tgaagggaag  | ggaccgcgtg  | gaaatcaggt  | 840  |
| gtttggctga  | tggcaaccct  | ccaccacact  | tcagcatcag  | caagcagaac  | cccagcacca  | 900  |
| gggaggcaga  | ggaagagaca  | accaacgaca  | acggggctct  | ggtgctggag  | cctgcccggg  | 960  |
| aggaacacag  | tgggcgctat  | gaatgtcagg  | cctggaactt  | ggacaccatg  | atatcgctgc  | 1020 |
| tgagtgaacc  | acaggaacta  | ctggtgaact  | atgtgtctga  | cgtccgagtg  | agtcgccag   | 1080 |
| cccctgagag  | acaggaaggc  | agcagcctca  | ccctgacctg  | tgaggcagag  | agtgccagag  | 1140 |
| acctcgagtt  | ccagtggctg  | agagaagaga  | cagaccagtg  | gctggaaagg  | gggcctgtgc  | 1200 |
| ttcagttgca  | tgacctgaaa  | cgggaggcag  | gaggcggcta  | tcgctgcgtg  | gcgtctgtgc  | 1260 |
| ccagcatacc  | cggcctgaac  | cgcacacagc  | tggtaagct   | ggccattttt  | ggccccctt   | 1320 |
| ggatggcatt  | caaggagagg  | aagggtgtgg  | tgaagagaa   | tatgggtgtg  | aatctgtctt  | 1380 |
| gtgaagcgtc  | agggcacccc  | cggcccacca  | tctcctggaa  | cgtcaacggc  | acggcaagtg  | 1440 |
| aacaagacca  | agatccacag  | cagtcctga   | gcacctgaa   | tgtcctcgtg  | accccgagc   | 1500 |
| tgttgagac   | aggtgttgaa  | tgcacggcct  | ccaacgacct  | gggcaaaaac  | accagcatcc  | 1560 |
| tcttctgga   | gctggctaat  | ttaaccaccc  | tcacaccaga  | ctccaacaca  | accactggcc  | 1620 |
| tcagcacttc  | cactgcccagt | cctcatacca  | gagccaacag  | cacctccaca  | gagagaaaagc | 1680 |
| tgccggagcc  | ggagagccgg  | ggcgtggcta  | tcgtggctgt  | gatttgtgtg  | atcctggctc  | 1740 |
| tggcgggtgt  | gggcgctgtc  | ctctatttcc  | tctataagaa  | gggcaagctg  | ccgtgcaggc  | 1800 |
| gctcaggga   | gcaggagatc  | acgctgcccc  | cgtctcgtaa  | gaccgaactt  | gtagttgaag  | 1860 |
| ttaagtccga  | taagctccca  | gaagagatgg  | gcctcctgca  | gggcagcagc  | ggtgacaaga  | 1920 |
| gggctccggg  | agaccagggg  | gagaaaatac  | tcgatctgag  | gcattagccc  | cgaatcactt  | 1980 |
| cagctccctt  | ccctgcctgg  | accattccca  | gctccctgct  | cactcttctc  | tcagccaaag  | 2040 |
| cctccaaagg  | gactagagag  | aagcctcctg  | ctccctcac   | ctgcacaccc  | cctttcagag  | 2100 |
| ggccactggg  | ttaggaacctg | aggacctcac  | ttggccctgc  | aagccgcttt  | tcagggacca  | 2160 |
| gtccaccacc  | atctcctcca  | cgttgagtga  | agctcatccc  | aagcaaggag  | cccagctctc  | 2220 |
| ccgagcgggt  | aggagagttt  | cttgacagac  | gtgttttttc  | tttacacaca  | ttatggctgt  | 2280 |
| aaatacctgg  | ctcctgccag  | cagctgagct  | gggtagcctc  | tctgagctgg  | tttctgtccc  | 2340 |
| caaaggctgg  | cttccaccat  | ccaggtgcac  | cactgaagtg  | aggacacacc  | ggagccaggc  | 2400 |
| gcctgctcat  | gttgaagtgc  | gctgttcaca  | cccgtccgg   | agagcacccc  | agcggcatcc  | 2460 |
| agaagcagct  | gcagtgttgc  | tgccaccacc  | ctcctgctcg  | cctcttcaaa  | gtctcctgtg  | 2520 |
| acattttttc  | tttggtcaga  | agccaggaac  | tgggtgtcatt | ccttaaaaaga | tacgtgccgg  | 2580 |
| ggccagggtg  | ggtggctcac  | gcctgtaate  | ccagcacttt  | gggaggccga  | ggcgggcgga  | 2640 |
| tcacaaaagtc | aggacgagac  | catcctggct  | aacacgggtga | aaccctgtct  | ctactaaaaa  | 2700 |
| tacaaaaaaa  | aattagctag  | gcgtagtgg   | tggcacctat  | agtcccagct  | actcgggaagg | 2760 |
| ctgaagcagg  | agaatgggtat | gaatccagga  | ggtggagctt  | gcagtgagcc  | gagaccgtgc  | 2820 |
| cactgcactc  | cagcctgggc  | aacacagcga  | gactccgtct  | cgaggaaaaa  | aaaagaaaag  | 2880 |
| acgcgtacct  | gcggtgagga  | agctgggcgc  | tgttttcgag  | ttcaggtgaa  | ttagcctcaa  | 2940 |
| tccccgtgtt  | cacttgctcc  | catagccctc  | ttgatggatc  | acgtaaaact  | gaaaggcagc  | 3000 |
| ggggagcaga  | caaagatgag  | gtctacactg  | tccttcatgg  | ggattaaagc  | tatggttata  | 3060 |
| ttagcaccaa  | acttctacaa  | accaagctca  | gggccccaac  | cctagaaggg  | cccaaattgag | 3120 |
| agaatggtac  | ttagggatgg  | aaaacggggc  | ctggctagag  | cttcgggtgt  | gtgtgtctgt  | 3180 |
| ctgtgtgtat  | gcatacatat  | gtgtgtatat  | atggttttgt  | caggtgtgta  | aatttgcaaa  | 3240 |
| ttgtttcctt  | tatatatgta  | tgtatatata  | tatatgaaaa  | tatatatata  | tatgaaaaat  | 3300 |
| aaagcttaat  | tgtcccagaa  | aatcatacat  | tgctttttta  | ttctacatgg  | gtaccacagg  | 3360 |
| aacctggggg  | cctgtgaaac  | tacaacaaaa  | aggcacacaa  | aaccgtttcc  | agttggcagc  | 3420 |
| agagatcagg  | ggttacctct  | gcttctgagc  | aaatgggtca  | agctctacca  | gagcagacag  | 3480 |
| ctaccctact  | tttcagcagc  | aaaacgtccc  | gtatgacgca  | gcacgaaggg  | cctggcaggc  | 3540 |
| tgttagcagg  | agctatgtcc  | cttccctatcg | tttccgtcca  | ctt         |             | 3583 |

<210> 40  
 <211> 1251  
 <212> DNA  
 <213> Homo sapiens

<400> 40

|             |             |             |             |            |             |      |
|-------------|-------------|-------------|-------------|------------|-------------|------|
| ggagctgttt  | acccccactc  | taataggggt  | tcaatataaa  | aagccggcag | agagctgtcc  | 60   |
| aagtcagacg  | cgctctgca   | tctgcgccag  | gcgaacgggt  | cctgcgcctc | ctgcagtcct  | 120  |
| agctctccac  | caccgccgcg  | tgcgcctgca  | gacgtccgc   | tcgctgcctt | ctctcctggc  | 180  |
| aggcgctgcc  | ttttctcccc  | gttaaagggc  | acttgggctg  | aaggatcgct | ttgagatctg  | 240  |
| aggaaccgcg  | agcgctttga  | gggacctgaa  | gctgtttttc  | ttcgttttcc | tttgggttca  | 300  |
| gtttgaacgg  | gagggttttg  | atcccttttt  | ttcagaatgg  | attatttgct | catgattttc  | 360  |
| tctctgctgt  | ttgtggcttg  | ccaaggagct  | ccagaaacag  | cagtcttagg | cgctgagctc  | 420  |
| agcgcggtgg  | gtgagaacgg  | cggggagaaa  | cccactccca  | gtccaccctg | gcggctccgc  | 480  |
| cggtccaagc  | gctgctcctg  | ctcgctccctg | atggataaaag | agtgtgtcta | cttctgccac  | 540  |
| ctggacatca  | tttgggtcaa  | cactcccag   | cacgttggtc  | cgtatggact | tggaaagccct | 600  |
| aggtccaaga  | gagccttgga  | gaatttactt  | cccacaaagg  | caacagaccg | tgagaataga  | 660  |
| tgccaatgtg  | ctagccaaaa  | agacaagaag  | tgctggaatt  | tttgccaagc | aggaaaagaa  | 720  |
| ctcagggtctg | aagacattat  | ggagaaagac  | tggaataatc  | ataagaaagg | aaaagactgt  | 780  |
| tccaagcttg  | ggaaaaagtg  | tatttatcag  | cagttagtga  | gaggaagaaa | aatcagaaga  | 840  |
| agttcagagg  | aacacctaag  | acaaaccagg  | tcggagacca  | tgagaaacag | cgtcaaatca  | 900  |
| tcttttcatg  | atcccaagct  | gaaaggcaag  | ccctccagag  | agcgttatgt | gaccacacac  | 960  |
| cgagcacatt  | ggtgacagac  | ttcggggcct  | gtctgaagcc  | atagcctcca | cggagagccc  | 1020 |
| tgtggccgac  | tctgcaactc  | ccaccctggc  | tgggatcaga  | gcaggagcat | cctctgctgg  | 1080 |
| ttcctgactg  | gcaaaggacc  | agcgtcctcg  | ttcaaaacat  | tccaagaaag | gttaaggagt  | 1140 |
| tcccccaacc  | atcttcaactg | gcttccatca  | gtggtaactg  | ctttggtctc | ttctttcatc  | 1200 |
| tggggatgac  | aatggacctc  | tcagcagaaa  | cacacagtca  | cattcgaatt | c           | 1251 |

<210> 41  
 <211> 2456  
 <212> DNA  
 <213> Homo sapiens

<400> 41

|             |             |             |             |            |             |      |
|-------------|-------------|-------------|-------------|------------|-------------|------|
| gcaagcagcg  | aacaagctga  | gacggatgat  | aatatggata  | caaaatctat | tctagaagaa  | 60   |
| cttctttctca | aaagatcaca  | gcaaaaagaag | aaaatgtcac  | caaataatta | caaagaacgg  | 120  |
| ctttttgttt  | tgacaaaaac  | aaaccttttc  | tactatgaat  | atgacaaaat | gaaaaggggc  | 180  |
| agcagaaaag  | gatccattga  | aattaagaaa  | atcagatgtg  | tggagaaagt | aaatctcgag  | 240  |
| gagcagacgc  | ctgtagagag  | acagtaccca  | tttcagattg  | tctataaaga | tgggcttctc  | 300  |
| tatgtctatg  | catcaaatga  | agagagccga  | agtcagtggg  | tgaaagcatt | acaaaaagag  | 360  |
| ataaggggta  | acccccacct  | gctggtcaag  | taccatagtg  | ggttcttcgt | ggacgggaag  | 420  |
| ttcctgtgtt  | gccagcagag  | ctgtaaagca  | gccccaggat  | gtaccctctg | ggaagcatat  | 480  |
| gctaattctgc | atactgcagt  | caatgaagag  | aaacacagag  | ttcccacctt | cccagacaga  | 540  |
| gtgctgaaga  | tacctcgggc  | agttcctgtt  | ctcaaaatgg  | atgcaccatc | ttcaagtacc  | 600  |
| actctagccc  | aatatgacaa  | cgaatcaaag  | aaaaactatg  | gctcccagcc | accatcttca  | 660  |
| agtaccagtc  | tagcgcaata  | tgacagcaac  | tcaaagaaaa  | tctatggctc | ccagccaaac  | 720  |
| ttcaacatgc  | agtatattcc  | aagggaagac  | ttccctgact  | ggtggcaagt | aagaaaactg  | 780  |
| aaaagtagca  | gcagcagtga  | agatgttgca  | agcagtaacc  | aaaaagaaag | aaatgtgaat  | 840  |
| cacaccacct  | caaagatttc  | atgggaattc  | cctgagtcaa  | gttcatctga | agaagaggaa  | 900  |
| aacctggatg  | attatgactg  | gtttgctggg  | aacatctcca  | gatcacaatc | tgaacagtta  | 960  |
| ctcagacaaa  | agggaaaaga  | aggagcattt  | atgggttagaa | attcgagcca | agtggaagtg  | 1020 |
| tacacagtgt  | ccttattttag | taaggctgtg  | aatgataaaa  | aaggaactgt | caaacattac  | 1080 |
| cacgtgcata  | caaatgctga  | gaacaaatta  | tacctggcag  | aaaactactg | ttttgattcc  | 1140 |
| attccaaagc  | ttattcatta  | tcatcaacac  | aattcagcag  | gcatgatcac | acggctccgc  | 1200 |
| cacctgtgtg  | caacaaaggc  | caacaaggtc  | cccgactctg  | tgtccctggg | aaatggaatc  | 1260 |
| tgggaactga  | aaagagaaga  | gattaccttg  | ttgaaggagc  | tgggaagtgg | ccagtttgga  | 1320 |
| gtggtccagc  | tgggcaagtg  | gaaggggcag  | tatgatgttg  | ctgttaagat | gatcaaggag  | 1380 |
| ggctccatgt  | cagaagatga  | attcttttcag | gaggcccgaa  | ctatgatgaa | actcagccat  | 1440 |
| cccaagctgg  | ttaaattcta  | tggagtgtgt  | tcaaaggaaat | accccatata | catagtgact  | 1500 |
| gaatatataa  | gcaatggctg  | cttgctgaat  | tacctgagga  | gtcacggaaa | aggacttgaa  | 1560 |
| ccttcccagc  | tcttagaaat  | gtgctacgat  | gtctgtgaag  | gcatggcctt | cttgagagagt | 1620 |

|            |            |             |            |             |             |      |
|------------|------------|-------------|------------|-------------|-------------|------|
| caccaattca | tacaccggga | cttggctgct  | cgtaactgct | tgggtggacag | agatctctgt  | 1680 |
| gtgaaagtat | ctgacttttg | aatgacaagg  | tatgttcttg | atgaccagta  | tgtcagttca  | 1740 |
| gtcggaaaca | agtttccagt | caagtgggtca | gctccagagg | tgtttcatta  | cttcaaatac  | 1800 |
| agcagcaagt | cagacgtatg | ggcatttggg  | atcctgatgt | gggagggtgt  | cagcctgggg  | 1860 |
| aagcagccct | atgacttgta | tgacaactcc  | cagggtggtc | tgaagggtctc | ccaggggccac | 1920 |
| aggctttacc | ggccccacct | ggcatcggac  | accatctacc | agatcatgta  | cagctgctgg  | 1980 |
| cacgagcttc | cagaaaagcg | tcccacattt  | cagcaactcc | tgtcttccat  | tgaaccactt  | 2040 |
| cgggaaaaag | acaagcattg | aagaagaaat  | taggagtgtc | gataagaatg  | aatatagatg  | 2100 |
| ctggccagca | ttttcattca | ttttaaggaa  | agttaggaag | cataagtaat  | tttagctagt  | 2160 |
| ttttaaatgt | gttctctgta | ttgtctatta  | tttagaaatg | aacaaggcag  | gaaacaaaag  | 2220 |
| attcccttga | aatttagatc | aaattagtaa  | ttttgtttta | tgctgctcct  | gatataacac  | 2280 |
| tttccagcct | atagcagaag | cacattttca  | gactgcaata | tagagactgt  | gttcatgtgt  | 2340 |
| aaagactgag | cagaactgaa | aaattactta  | ttggatatct | attcttttct  | ttatatgtgc  | 2400 |
| attgtcacaa | caattaaata | tactaccaag  | tacagaaatg | tggaaaaaaa  | aaaccg      | 2456 |

<210> 42  
 <211> 4465  
 <212> DNA  
 <213> Homo sapiens

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| <400> 42    |             |             |             |             |             |      |
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| ctccttcagc  | tccacagcca  | gacgccctca  | gacagcaaag  | cctacccccg  | cgccgcgccc  | 120  |
| tgcccgccgc  | tcggatgctc  | gcccgcgccc  | tgctgctgtg  | cgcggtcctg  | gcgctcagcc  | 180  |
| atacagcaaa  | tccttgctgt  | ttccacccat  | gtcaaaaccg  | aggtgtatgt  | atgagtgtgg  | 240  |
| gatttgacca  | gtataagtgc  | gattgtaccc  | ggacaggatt  | ctatggagaa  | aactgctcaa  | 300  |
| caccggaatt  | tttgacaaga  | ataaaattat  | ttctgaaacc  | cactccaaac  | acagtgcact  | 360  |
| acatacttac  | ccacttcaag  | ggattttgga  | acgttgtgaa  | taacattccc  | ttccttcgaa  | 420  |
| atgcaattat  | gagttatgtc  | ttgacatcca  | gatcacattt  | gattgacagt  | ccaccaactt  | 480  |
| acaatgctga  | ctatggctac  | aaaagctggg  | aagccttctc  | taacctctcc  | tattatacta  | 540  |
| gagcccttcc  | tcctgtgcct  | gatgattgcc  | cgactccctt  | gggtgtcaaa  | ggtaaaaagc  | 600  |
| agcttccctga | ttcaaagtga  | attgtggaaa  | aattgtctct  | aagaagaaaag | ttcatccctg  | 660  |
| atccccaggg  | ctcaaacatg  | atgtttgcat  | tctttgcccc  | gcacttcacg  | catcagtttt  | 720  |
| tcaagacaga  | tcataagcga  | gggcagcctt  | tcaccaacgg  | gctggggccat | gggggtggact | 780  |
| taaatcatat  | ttacggtgaa  | actctggcta  | gacagcgtaa  | actgcgcctt  | ttcaaggatg  | 840  |
| gaaaaatgaa  | atatcagata  | attgatggag  | agatgtatcc  | tcccacagtc  | aaagatactc  | 900  |
| aggcagagat  | gatctaccct  | cctcaagtcc  | ctgagcatct  | acggtttgct  | gtggggcagg  | 960  |
| aggctcttgg  | tctggtgcct  | ggtctgatga  | tgtatgccac  | aatctggctg  | cgggaaacaca | 1020 |
| acagagtatg  | cgatgtgctt  | aaacaggagc  | atcctgaatg  | gggtgatgag  | cagttgttcc  | 1080 |
| agacaagcag  | gctaatactg  | ataggagaga  | ctattaagat  | tgtgattgaa  | gattatgtgc  | 1140 |
| aacacttgag  | tggctatcac  | ttcaaactga  | aatttgaccc  | agaactactt  | ttcaacaaac  | 1200 |
| aattccagta  | ccaaaatcgt  | attgctgctg  | aatttaacac  | cctctatcac  | tggcatcccc  | 1260 |
| ttctgcctga  | cacctttcaa  | attcatgacc  | agaaatacaa  | ctatcaacag  | tttatctaca  | 1320 |
| acaactctat  | attgctggaa  | catggaatta  | cccagtttgt  | tgaatcattc  | accaggcaaa  | 1380 |
| ttgctggcag  | ggttgctggg  | ggtaggaatg  | ttccaccgcg  | agtacagaaa  | gtatcacagg  | 1440 |
| cttccattga  | ccagagcagg  | cagatgaaat  | accagtcttt  | taatgagtac  | cgcaaacgct  | 1500 |
| ttatgctgaa  | gccctatgaa  | tcatttgaaag | aacttacagg  | agaaaaggaa  | atgtctgcag  | 1560 |
| agttggaagc  | actctatggg  | gacatcgatg  | ctgtggagct  | gtatcctgcc  | cttctggtag  | 1620 |
| aaaagcctcg  | gccagatgcc  | atctttgggtg | aaaccatggg  | agaagtggga  | gcaccattct  | 1680 |
| ccttgaaagg  | acttatgggt  | aatgttatat  | gttctcctgc  | ctactggaag  | ccaagcactt  | 1740 |
| ttgggtggaga | agtgggtttt  | caaatcatca  | acactgcctc  | aattcagctc  | ctcatctgca  | 1800 |
| ataacgtgaa  | gggctgtccc  | tttacttcat  | tcagtgttcc  | agatccagag  | ctcattaaaa  | 1860 |
| cagtcaccat  | caatgcaagt  | tcttcccgcct | ccggactaga  | tgatatcaat  | cccacagtac  | 1920 |
| tactaaaaga  | acgttcgact  | gaactgtaga  | agtctaata   | tcataattat  | ttattttatat | 1980 |
| gaaccatgtc  | tattaattta  | attattttaat | aatattttata | ttaaactcct  | tatgttactt  | 2040 |
| aacatcttct  | gtaacagaag  | tcagtactcc  | tggtgcggag  | aaaggagtca  | tacttgtgaa  | 2100 |
| gacttttatg  | tcactactct  | aaagattttg  | ctggtgctgt  | taagtttgga  | aaacagtttt  | 2160 |
| tattctgttt  | tataaaccag  | agagaaatga  | gttttgacgt  | ctttttactt  | gaatttcaac  | 2220 |
| ttattattta  | agaacgaaag  | taaagatgtt  | tgaataactta | aacactatca  | caagatggca  | 2280 |
| aaatgctgaa  | agttttttaca | ctgtcgtatg  | ttccaatgca  | tcttccatga  | tgcattagaa  | 2340 |
| gtaactaatg  | tttgaaattt  | taaagtactt  | ttggttattt  | ttctgtcatc  | aaacaaaaac  | 2400 |



|             |             |             |             |             |             |      |
|-------------|-------------|-------------|-------------|-------------|-------------|------|
| aggatcagct  | gcattattaa  | atgaatattt  | aaattagaca  | ttaccagtaa  | tttcatgtct  | 2460 |
| acttttttaa  | atcagcaatg  | aaacaataat  | ttgaaatttc  | ttaattcata  | gggtagaatc  | 2520 |
| acctgtaaaa  | gcttggttga  | tttcttaaag  | ttattaaact  | tgtacatata  | ccaaaaagaa  | 2580 |
| gctgtcttgg  | atttaaactc  | gtaaaatcag  | atgaaatttt  | actacaattg  | cttggttaaaa | 2640 |
| tattttataa  | gtgatgttcc  | tttttcacca  | agagtataaa  | ccttttttagt | gtgactgtta  | 2700 |
| aaacttcctt  | ttaaatacaa  | atgccaaatt  | tattaagggtg | gtggagccac  | tgcagtgtta  | 2760 |
| tctcaaaaata | agaatatttt  | gttgagatat  | tccagaattt  | gtttatatgg  | ctggtaacat  | 2820 |
| gtaaaatcta  | tatcagcaaa  | aggggtctacc | tttaaaataa  | gcaataacaa  | agaagaaaac  | 2880 |
| caaattattg  | ttcaaattta  | ggtttaaact  | tttgaagcaa  | actttttttt  | atccttgtgc  | 2940 |
| actgcaggcc  | tggtaactcag | attttgctat  | gagggttaatg | aagtaccaag  | ctgtgcttga  | 3000 |
| ataacgatat  | gttttctcag  | attttctgtt  | gtacagttta  | atttagcagt  | ccatatcaca  | 3060 |
| ttgcaaaaagt | agcaatgacc  | tcataaaata  | cctcttcaaa  | atgcttaaat  | tcatttcaca  | 3120 |
| cattaatttt  | atctcagctc  | tgaagccaat  | tcagtaggtg  | cattggaatc  | aagcctggct  | 3180 |
| acctgcatgc  | tgttcccttt  | cttttcttct  | tttagccatt  | ttgctaagag  | acacagctct  | 3240 |
| ctcatcactt  | cgtttctcct  | attttgtttt  | actagtttta  | agatcagagt  | tcactttctt  | 3300 |
| tggactctgc  | ctatattttc  | ttacctgaac  | ttttgcaagt  | tttcaggtaa  | acctcagctc  | 3360 |
| aggactgcta  | tttagctcct  | cttaagaaga  | ttaaaagaga  | aaaaaaaagg  | ccctttttaa  | 3420 |
| aatagtatac  | acttatttta  | agtgaaaagc  | agagaatttt  | atttatagct  | aatttttagct | 3480 |
| atctgtaacc  | aagatggatg  | caaagagggt  | agtgcctcag  | agagaactgt  | acgggggttg  | 3540 |
| tgactggaaa  | aagttacgtt  | cccattctaa  | ttaatgccct  | ttcttattta  | aaaacaaaaac | 3600 |
| caaattgatat | ctaagtagtt  | ctcagcaata  | ataataatga  | cgataatact  | tcttttccac  | 3660 |
| atctcattgt  | cactgacatt  | taatgggtact | gtatattact  | taatttattg  | aagattatta  | 3720 |
| tttatgtctt  | attaggacac  | tatgggttata | aactgtgttt  | aagcctacaa  | tcattgattt  | 3780 |
| ttttttgtta  | tgtcacaaatc | agtataattt  | ctttgggggt  | acctctctga  | atattatgta  | 3840 |
| aacaatccaa  | agaaatgatt  | gtattaagat  | ttgtgaataa  | atttttagaa  | atctgattgg  | 3900 |
| catattgaga  | tatttaaggt  | tgaatgtttg  | tccttaggat  | aggcctatgt  | gctagcccac  | 3960 |
| aaagaatatt  | gtctcattag  | cctgaatgtg  | ccataagact  | gaccttttaa  | aatgttttga  | 4020 |
| gggatctgtg  | gatgcttcgt  | taatttggtc  | agccacaatt  | tattgagaaa  | atattctgtg  | 4080 |
| tcaagcactg  | tgggttttaa  | tattttttaa  | tcaaacgctg  | attacagata  | atagtattta  | 4140 |
| tataaataat  | tgaaaaaaat  | tttcttttgg  | gaagagggag  | aaaatgaaat  | aaatatcatt  | 4200 |
| aaagataact  | caggagaatc  | ttctttacaa  | ttttacgttt  | agaatgttta  | agggttaagaa | 4260 |
| agaaatagtc  | aatatgcttg  | tataaaacac  | tgttcactgt  | ttttttttaa  | aaaaaaactt  | 4320 |
| gatttggtat  | taacattgat  | ctgctgacaa  | aacctgggaa  | tttgggttgt  | gtatgcgaat  | 4380 |
| gtttcagtg   | ctcagacaaa  | tgtgtattta  | acttatgtaa  | aagataagtc  | tggaaataaa  | 4440 |
| tgtctgttta  | tttttgtact  | attta       |             |             |             | 4465 |

<210> 43  
 <211> 5434  
 <212> DNA  
 <213> Homo sapiens

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| cggtcgagct | acggtcgcgg | acgagtggaa  | ccgagactgc  | cccgcggagc | cgccggtatg  | 120  |
| agcgcctctc | gccaccccg  | gtcccaggcc  | cggcctttct  | gacaagagct | agacttcggg  | 180  |
| ctccttgagg | atattcagtt | ttgtatgttt  | gaatatcctc  | tcaccatggt | cagcataaag  | 240  |
| taccattctt | aatgattatc | ctcaacaaga  | cagggtgtgag | aggggtgctg | ttgcattgca  | 300  |
| atcatggtgc | aaaaatacca | gtccccagtg  | agagtgtaca  | aatacccctt | tgaatttaatt | 360  |
| atggctgect | atgaaaggag | gttccctaca  | tgtcctttga  | ttccgatgtt | cgtgggcagt  | 420  |
| gacactgtga | gtgaattcaa | gagcgaagat  | ggggctattc  | atgtcattga | aaggcgctgc  | 480  |
| aagctggatg | tagatgcacc | cagactgctg  | aagaagattg  | caggagttag | ttatgtttat  | 540  |
| tttgtccaga | aaaactcact | gaattctcgg  | gaacgtactt  | tgcacattga | ggcttataat  | 600  |
| gaaacgtttt | ccaatcggtt | catcattaat  | gagcattgct  | gctacaccgt | tcaccctgaa  | 660  |
| aatgaagatt | ggacctgttt | tgaacagctc  | gcaagtttag  | atattaaatc | tttctttggt  | 720  |
| tttgaaagta | cagtggaaaa | aattgcaatg  | aaacaatata  | ccagcaacat | taaaaaagga  | 780  |
| aaggaaatca | tgaataacta | ccttcgcctc  | ttagaagaag  | aaggcataac | ctttgtgccc  | 840  |
| cgttgagctc | cgccttccat | cacgcctctc  | tcagagacat  | cttcatcatc | ctccaagaaa  | 900  |
| caagcagctg | ccatggccgt | tgcatcccca  | gaagctgccc  | tcaaggaggg | gctgagtggt  | 960  |
| gatgcctcta | cgagccccc  | cgtcacctgag | cccggtgtgg  | gcacccctga | cgacaaacta  | 1020 |
| gatgccgacc | acatcaagag | atacctgggc  | gatttgactc  | cgctgcagga | gagctgcctc  | 1080 |
| attagacttc | gccagtggct | ccaggagacc  | cacaagggca  | aaattccaaa | agatgagcat  | 1140 |



|             |             |             |             |             |             |      |
|-------------|-------------|-------------|-------------|-------------|-------------|------|
| attcttcgggt | tctctccgtgc | acgggattttt | aatattgaca  | aagccagaga  | gatcatgtgt  | 1200 |
| cagtcttttga | cgtggagaaa  | gcagcatcag  | gtagactaca  | ttcttgaaac  | ctggaccctt  | 1260 |
| cctcaggtcc  | ttcaggatta  | ctacgcggga  | ggctggcatc  | atcacgacaa  | agatgggcgg  | 1320 |
| cccctctacg  | tgctcaggct  | ggggcagatg  | gacaccaaa   | gcttggtgag  | agcgcctcggg | 1380 |
| gaggaagccc  | tgctgagata  | cgttctctcc  | gtaaataag   | aacggctaag  | gcgatgcgaa  | 1440 |
| gagaatacaa  | aagtcttttg  | tcggcctatc  | agctcatgga  | cctgcctggt  | ggacttggaa  | 1500 |
| gggctgaaca  | tgcgccactt  | gtggagacct  | gggtgaaaag  | cgctgctgctg | gatcatcgag  | 1560 |
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| gtatttctctg | tgctctggac  | gctgggttagt | ccgttcattg  | atgacaacac  | cagaaggaag  | 1680 |
| ttcctcatatt | atgcaggaaa  | tgactaccag  | ggctcctggag | gcctgctgga  | ttacatcgac  | 1740 |
| aaagagatta  | ttccagattt  | cctgagtggg  | gagtgcattg  | gcgaagtgcc  | agaggggtgga | 1800 |
| ctgggtcccca | aatctctgtg  | ccggactgca  | gaggagctgg  | agaacgaaga  | cctgaagctc  | 1860 |
| tggaactgaga | ccatctacca  | gtctgcaagc  | gtcttcaaag  | gagccccaca  | tgagattctc  | 1920 |
| attcagattg  | tggaatgcctc | gtcagtcattc | acttgggatt  | tcgacgtgtg  | caaaggggac  | 1980 |
| attgtgttta  | acatctatca  | ctccaagagg  | tcgccacaac  | cacccaaaaa  | ggactccctg  | 2040 |
| ggagcccaca  | gcatcacctc  | tccgggtggg  | aacaatgtgc  | agctcataga  | caaagtctgg  | 2100 |
| cagctggggcc | gcgactacag  | catgggtggag | tcgcctctga  | tctgcaaaga  | aggagaaaagc | 2160 |
| gtgcagggtt  | cccatgtgac  | cagggtggccg | ggcttctaca  | tctgacgtg   | gaaattccac  | 2220 |
| agcatgcctg  | cgtgcgcgcg  | cagcagcctt  | ccccgggtgg  | acgacgtgct  | tgctccctg   | 2280 |
| caggctctctt | cgacaaagtg  | taaagtgatg  | tactacaccg  | aggatgatcgg | ctcggaggat  | 2340 |
| ttcagaggtt  | ccatgacgag  | cctggaggtcc | agccacagcg  | gcttctccca  | gctgagtgcc  | 2400 |
| gccaccacct  | cctccagcca  | gtcccaactcc | agctccatga  | tctccaggta  | gtgcgcgcgt  | 2460 |
| gcctgcacct  | agtgtgcaga  | ggggacggcc  | gccccctctc  | ggacagcagc  | tgccccgcgc  | 2520 |
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| attgatgcaa  | aaaatttttc  | caacgaaactc | cgcattgtcc  | attagtgaat  | gaattcctgt  | 2820 |
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| gtctgtggac  | ttaggggccag | cccttgaggt  | ccttatcctc  | tgaggattca  | gaggttgcct  | 3000 |
| gcggagtacc  | ttgtcccagg  | gccagacaca  | cccacaccac  | ccactgtctg  | cagtggggcc  | 3060 |
| gggggctcag  | gaggggctct  | cagggactcc  | tgggtgactcc | aggaaaatgc  | tgccatcggt  | 3120 |
| aaacattact  | ttctctttcc  | tcctttttcaa | atctttttga  | tacttttttag | agcaggattt  | 3180 |
| ttctgtatgt  | gaacttgggt  | ggggggggttc | ttcccggttc  | cttccgtgctg | tcgccccctc  | 3240 |
| cacctgcagt  | cagctcccag  | cccagtgtag  | gccatctcct  | ctgtgccctc  | tgagggtcga  | 3300 |
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| cacttcagggt | tggcgtgtgg  | catgtaggag  | tcctgcttct  | ttgtacatgg  | gaattgtgga  | 3480 |
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| aaatcagaat  | atgggatttg  | tttgcccttt  | acattttgtt  | taattcctga  | ttttaaaagc  | 3660 |
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| gcgtggtagg  | catggagatc  | ctgggtgtgc  | cgtctcagct  | ccgctctgaa  | ggcactgtgt  | 3900 |
| gggtgctgctg | tgactggaga  | gctgtgtgga  | ggccatgtgt  | gccccgtgca  | gggatcagga  | 3960 |
| gggcgggggga | gggaccgagc  | agccctcttg  | cccggctcggg | tcagccctag  | tggtgcctg   | 4020 |
| cacactgtag  | acgtcccagg  | gcctgtgctg  | tgatcacctg  | cctttggacc  | acatttgtgt  | 4080 |
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| gttagtaggt  | agggctagta  | ggtagggcta  | gtaggtagg   | ttagtaggta  | gggttcgtag  | 4620 |
| gtagggctgg  | taggtagggt  | tagtaggtag  | ggctagtagg  | tagggctagt  | aggtagggtc  | 4680 |
| agtaggtagg  | gctagtaggt  | agggctagta  | ggtagggcta  | gtaggtagg   | ctagtaggta  | 4740 |
| gggttcgtag  | gtaggggttcg | taggtagggt  | tcgtaggtag  | ggtaggtagc  | gcgtctgtgc  | 4800 |

|            |            |             |             |            |            |      |
|------------|------------|-------------|-------------|------------|------------|------|
| tgttccacc  | tgggtgttcc | tgttcccaaa  | tcacaagggc  | ctgaaggtgg | tccctgcttt | 4860 |
| ctctttctct | ttctctgtgt | ctcagatggc  | gattttgtctg | acagctgcca | agaaaatgct | 4920 |
| tcactcaaca | gtcctcatgt | gccagagat   | gtttatagaa  | ctgtttgaat | tgcagccatc | 4980 |
| ccctgcccc  | tcccaggctg | aagatctgtt  | ctttttaagt  | tgattcgga  | gtggcattct | 5040 |
| tttataccca | aagactgtag | tgcattctga  | agagctcaaa  | gcacatgacc | gcacaaatgc | 5100 |
| ttacagggtt | tcctcccag  | taatccaatc  | tcactcccct  | tgtaaggga  | ttctggggca | 5160 |
| gctatgggtt | gagtatgcag | tttgcacgt   | gtttctacct  | ttagtacctt | gccactcttt | 5220 |
| taaaacgctg | ctgtcatttc | ccatttctta  | gtactaatga  | ttctttgatt | ctccctctat | 5280 |
| tatgtcttaa | ttcattttcc | ttcctaaatt  | tgttatttgc  | atatcaaatt | ctgtaaatgt | 5340 |
| tttgtaaaac | tattacctca | cttggttaata | caatactgat  | agtctttaaa | agattttttt | 5400 |
| attggtatca | ataataaatg | tgaactattt  | aaag        |            |            | 5434 |

<210> 44  
 <211> 2986  
 <212> DNA  
 <213> Homo sapiens

<400> 44

|             |            |             |             |             |             |      |
|-------------|------------|-------------|-------------|-------------|-------------|------|
| ggccccagct  | cgacgtgag  | ctcctctgct  | actcagagtt  | gcaacctcag  | cctcgctatg  | 60   |
| gctcccagca  | gccccggcc  | cgcgtgccc   | gcactcctgg  | tctgtctcgg  | ggctctgttc  | 120  |
| ccaggacctg  | gcaatgccc  | gacatctgtg  | tccccctcaa  | aagtcacctc  | gccccgggga  | 180  |
| ggctccgtgc  | tggtgacatg | cagcacctcc  | tgtgaccagc  | ccaagtgtgt  | gggcatagag  | 240  |
| accccggtgc  | ctaaaaagga | gttgctcctg  | cctgggaaca  | accggaaggt  | gtatgaactg  | 300  |
| agcaatgtgc  | aagaagatag | ccaaccaatg  | tgctattcaa  | actgccctga  | tgggcagtca  | 360  |
| acagctaaaa  | ccttctcac  | cgtgtactgg  | actccagaac  | gggtggaact  | ggcacccttc  | 420  |
| ccctcttggc  | agccagtggg | caagaacctt  | accctacgtc  | gccaggtgga  | gggtggggca  | 480  |
| ccccgggcca  | acctcaccgt | ggtgctgctc  | cgtggggaga  | aggagctgaa  | acgggagcca  | 540  |
| gctgtggggg  | agcccgtgga | ggtcacgacc  | acggtgctgg  | tgaggagaga  | tcaccatgga  | 600  |
| gccaatttct  | cgtgccgcac | tgaactggac  | ctgcggcccc  | aagggtgga   | gctgtttgag  | 660  |
| aacacctcgg  | ccccctacca | gctccagacc  | tttgtcctgc  | cagcgactcc  | cccacaactt  | 720  |
| gtcagcccc   | gggtcctaga | ggtggacacg  | caggggaccg  | tggctctgtc  | cctggacggg  | 780  |
| ctgttcccag  | tctcggaggc | ccagggtccac | ctggcactgg  | gggaccagag  | gttgaacccc  | 840  |
| acagtcacct  | atggcaacga | ctccttctcg  | gccaaggcct  | cagtcagtgt  | gaccgcagag  | 900  |
| gacgagggca  | cccagcggtc | gacgtgtgca  | gtaatactgg  | ggaaccagag  | ccaggagaca  | 960  |
| ctgcagacag  | tgaccatcta | cagctttccg  | gcgcccacg   | tgattctgac  | gaagccagag  | 1020 |
| gtctcagaag  | ggaccgaggt | gacagtgaag  | tgtgaggccc  | accctagagc  | caagggtgacg | 1080 |
| ctgaatgggg  | ttccagcccc | gccactgggc  | ccgaggggccc | agctcctgct  | gaaggccacc  | 1140 |
| ccaggaggaca | acgggcgag  | cttctcctgc  | tctgcaaccc  | tggaggtggc  | cggccagctt  | 1200 |
| atacacaaga  | accagaccgg | ggagcttcgt  | gtcctgtatg  | gcccccgact  | ggacgagagg  | 1260 |
| gattgtccgg  | gaaactggac | gtggccagaa  | aattcccagc  | agactccaat  | gtgccaggct  | 1320 |
| tgggggaacc  | cattgcccga | gctcaagtgt  | ctaaaggatg  | gcactttccc  | actgcccattc | 1380 |
| gggggaatcag | tgactgtcac | tcgagatctt  | gaggggcacct | acctctgtcg  | ggccaggagc  | 1440 |
| actcaagggg  | aggtcacccg | cgagggtgacc | gtgaatgtgc  | tctccccccg  | gtatgagatt  | 1500 |
| gtcatcatca  | ctgtggtagc | agccgcagtc  | ataatgggca  | ctgcaggcct  | cagcacgtac  | 1560 |
| ctctataacc  | gccagcggaa | gatcaagaaa  | tacagactac  | aacaggccca  | aaaagggacc  | 1620 |
| cccatgaaac  | cgaacacaca | agccacgcct  | ccctgaacct  | atcccgggac  | agggcctctt  | 1680 |
| cctcggcctt  | cccatatttg | tggcagtggt  | gccacactga  | acagagtgga  | agacatatgc  | 1740 |
| catgcagcta  | cacctaccgg | ccctgggacg  | ccggaggaca  | gggcattgtc  | ctcagtcaga  | 1800 |
| tacaacagca  | tttggggcca | tgttacctgc  | acacctaaaa  | cactaggcca  | cgcattctgat | 1860 |
| ctgtagtcat  | atgactaagc | caagaggaag  | gagcaagact  | caagacatga  | ttgatggatg  | 1920 |
| ttaaagtcta  | gcctgatgag | aggggaagtg  | gtgggggaga  | catagcccca  | ccatgaggac  | 1980 |
| atacaactgg  | gaaatactga | aacttgcctg  | ctattgggta  | tgctgaggcc  | cacagactta  | 2040 |
| cagaagaagt  | ggccctccat | agacatgtgt  | agcatcaaaa  | cacaaaggcc  | cacacttctt  | 2100 |
| gacggatgcc  | agcttgggca | ctgctgtcta  | ctgaccccaa  | cccttgatga  | tatgtattta  | 2160 |
| ttcatttggt  | atcttaccag | ctattttattg | agtgtctttt  | atgtaggcta  | aatgaacata  | 2220 |
| ggtctctggc  | ctcacggagc | tccagtccta  | tgtcacattc  | aaggtcacca  | ggtacagttg  | 2280 |
| tacaggttgt  | acactgcagg | agagtgcctg  | gcaaaaagat  | caaattggggc | tggcacttct  | 2340 |
| cattggccaa  | cctgcctttc | cccagaagga  | gtgatttttc  | tatcggcaca  | aaagcactat  | 2400 |
| atggactggg  | aatgggtcac | aggttcagag  | attacccagt  | gaggccttat  | tcctcccttc  | 2460 |
| ccccaaaac   | tgacaccttt | gttagccacc  | tccccaccca  | catacatttc  | tgccagtgtt  | 2520 |
| cacaatgaca  | ctcagcggtc | atgtctggac  | atgagtggcc  | agggaatatg  | cccaagctat  | 2580 |

|            |             |            |            |             |            |      |
|------------|-------------|------------|------------|-------------|------------|------|
| gccttgctct | cttgctctgt  | ttgcatttca | ctgggagctt | gcactattgc  | agctccagtt | 2640 |
| tcctgcagtg | atcagggtcc  | tgcaagcagt | ggggaagggg | gccaaggtat  | tggaggactc | 2700 |
| cctcccagct | ttggaagggg  | catccgcgtg | tgtgtgtgtg | tgtatgtgta  | gacaagctct | 2760 |
| cgctctgtca | cccaggctgg  | agtgcagtg  | tgcaatcatg | gttccactgca | gtcttgacct | 2820 |
| tttgggctca | agtgatccctc | ccacctcagc | ctcctgagta | gctgggacca  | taggctcaca | 2880 |
| acaccacacc | tggcaaattt  | gatttttttt | ttttttttca | gagacggggg  | ctcgcaacat | 2940 |
| tgcccagact | tcctttgtgt  | tagttaataa | agctttctca | actgcc      |            | 2986 |

<210> 45

<211> 4138

<212> DNA

<213> Homo sapiens

<400> 45

|             |            |             |             |             |             |      |
|-------------|------------|-------------|-------------|-------------|-------------|------|
| cttctgtgct  | gttccttctt | gcctctaact  | tgtaaacaag  | acgtactagg  | acgatgctaa  | 60   |
| tggaaagtca  | caaaccgctg | ggtttttgaa  | aggatccttg  | ggacctcatg  | cacatttgtg  | 120  |
| gaaactggat  | ggagagattt | ggggaagcat  | ggactcttta  | gccagcttag  | ttctctgtgg  | 180  |
| agtcagcttg  | ctcctttctg | gaactgtgga  | agggtgccatg | gacttgatct  | tgatcaattc  | 240  |
| cctacctctt  | gtatctgatg | ctgaaacatc  | tctcacctgc  | attgcctctg  | gggtggcgccc | 300  |
| ccatgagccc  | atcaccatag | gaagggactt  | tgaagcctta  | atgaaccagc  | accaggatcc  | 360  |
| gctggaagtt  | actcaagatg | tgaccagaga  | atgggctaaa  | aaagtgtgtt  | ggaagagaga  | 420  |
| aaaggctagt  | aagatcaatg | gtgcttattt  | ctgtgaaggg  | cgagttcgag  | gagaggcaat  | 480  |
| caggatacga  | accatgaaga | tgcgtcaaca  | agcttctctc  | ctaccagcta  | ctttaactat  | 540  |
| gactgtggac  | aagggagata | acgtgaacat  | atctttcaaa  | aaggtattga  | ttaaagaaga  | 600  |
| agatgcagtg  | atttacaaaa | atgggttctt  | catccattca  | gtgccccggc  | atgaagtacc  | 660  |
| tgatattcta  | gaagtacacc | tgccctcatg  | tcagccccag  | gatgctggag  | tgtactcggc  | 720  |
| caggtatata  | ggaggaaacc | tcttcacctc  | ggccttcacc  | aggctgatag  | tccggagatg  | 780  |
| tgaagcccag  | aagtggggac | ctgaatgcaa  | ccatctctgt  | actgcttgta  | tgaacaatgg  | 840  |
| tgtctgccat  | gaagatactg | gagaatgcat  | ttgccctcct  | gggtttatgg  | gaaggacgtg  | 900  |
| tgagaaggct  | tgtgaactgc | acacgttttg  | cagaacttgt  | aaagaaagg   | gcagtggaca  | 960  |
| agagggatgc  | aagtcttatg | tgttctgtct  | ccctgacccc  | tatgggtgtt  | cctgtgccac  | 1020 |
| aggctggaag  | ggtctgcagt | gcaatgaagc  | atgccaccct  | ggtttttacg  | ggccagatgt  | 1080 |
| taagcttagg  | tgcaagtgc  | acaatgggga  | gatgtgtgat  | cgcttccaag  | gatgtctctg  | 1140 |
| ctctccagga  | tggcagggg  | tccagtgtga  | gagagaaggc  | ataccgagga  | tgaccccaaa  | 1200 |
| gatagtggat  | ttgccagatc | atatagaagt  | aaacagtggg  | aaatttaatc  | ccatttgcaa  | 1260 |
| agcttctggc  | tggccgctac | ctactaatga  | agaaatgacc  | ctggtgaagc  | cggatgggac  | 1320 |
| agtgtcccat  | ccaaaagact | ttaaccatac  | ggatcatttc  | tcagttagcca | tattcaccat  | 1380 |
| ccaccggatc  | ctccccctg  | actcaggagt  | ttgggtctgc  | agtgtgaaca  | cagtggctgg  | 1440 |
| gatggtggaa  | aagcccttca | acatttctgt  | taaagttctt  | ccaaagcccc  | tgaatgcccc  | 1500 |
| aaacgtgatt  | gacactggac | ataactttgc  | tgatcatcaac | atcagctctg  | agccttactt  | 1560 |
| tggggatgga  | ccaatcaaat | ccaagaagct  | tctatacaaa  | cccgttaatc  | actatgaggc  | 1620 |
| ttggcaacat  | attcaagtga | caaatgagat  | tgttacactc  | aactatttgg  | aacctcggac  | 1680 |
| agaatatgaa  | ctctgtgtgc | aactggtccg  | tcgtggagag  | ggtggggaag  | ggcatcctgg  | 1740 |
| acctgtgaga  | cgcttcacaa | cagcttctat  | cggactccct  | cctccaagag  | gtctaaatct  | 1800 |
| cctgcctaaa  | agtcagacca | ctctaaattt  | gacctggcaa  | ccaatatttc  | caagctcgga  | 1860 |
| agatgacttt  | tatgttgaag | tggagagaag  | gtctgtgcaa  | aaaagtgate  | agcagaatat  | 1920 |
| taaagttcca  | ggcaacttga | cttcggtgct  | acttaacaac  | ttacatccca  | gggagcagta  | 1980 |
| cgtgggtccga | gctagagtca | acaccaaggc  | ccaggggggaa | tggagtgaag  | atctcactgc  | 2040 |
| ttggaccctt  | agtgaatttc | ttcctcctca  | accagaaaac  | atcaagattt  | ccaacattac  | 2100 |
| acactcctcg  | gctgtgattt | cttggaacaat | attggatggc  | tattctattt  | cttctattac  | 2160 |
| tatccgttac  | aaggttcaag | gcaagaatga  | agaccagcac  | gttgatgtga  | agataaagaa  | 2220 |
| tgccaccatc  | attcagtatc | agctcaaggg  | cctagagcct  | gaaacagcat  | accagggtgga | 2280 |
| catttttgca  | gagaacaaca | taggggtcaag | caaccagacc  | ttttctcatg  | aactggtgac  | 2340 |
| cctcccagaa  | tctcaagcac | cagcggacct  | cggagggggg  | aagatgctgc  | ttatagccat  | 2400 |
| ccttggtctt  | gctggaatga | cctgcctgac  | tgtgtgtgtg  | gcctttctga  | tcataattgca | 2460 |
| attgaagagg  | gcaaattgtg | aaaggagaat  | ggcccaagcc  | ttccaaaacg  | tgagggaaga  | 2520 |
| accagctgtg  | cagttcaact | cagggactct  | ggccctaaac  | aggaagggtc  | aaaacaaccc  | 2580 |
| agatcctaca  | attttccag  | tgcttgactg  | gaatgcacatc | aaatttcaag  | atgtgattgg  | 2640 |
| ggaggggcaat | tttggccaag | ttcttaaggc  | gcgcgcaag   | aaggatgggt  | tacggatgga  | 2700 |
| tgctgccatc  | aaaagaatga | aagaatatgc  | ctccaaagat  | gatcacaggg  | actttgcagg  | 2760 |
| agaactggaa  | gttctttgta | aacttgga    | ccatccaaac  | atcatcaatc  | tcttaggagc  | 2820 |

|             |             |             |            |            |             |      |
|-------------|-------------|-------------|------------|------------|-------------|------|
| atgtgaacat  | cgaggctact  | tgtacctggc  | cattgagtag | gcgccccatg | gaaaccttct  | 2880 |
| ggacttcctt  | cgcaagagcc  | gtgtgctgga  | gacggaccca | gcatttgcca | ttgccaatag  | 2940 |
| caccgcgtcc  | acactgtcct  | cccagcagct  | ccttcacttc | gctgccgacg | tggcccgagg  | 3000 |
| catggactac  | ttgagccaaa  | aacagtttat  | ccacagggat | ctggctgcca | gaaacatttt  | 3060 |
| agttgggtgaa | aactatgtgg  | caaaaatagc  | agatttttga | ttgtcccgag | gtcaagaggt  | 3120 |
| gtacgtgaaa  | aagacaatgg  | gaaggctccc  | agtgcgctgg | atggccatcg | agtcactgaa  | 3180 |
| ttacagtgtg  | tacacaacca  | acagtgatgt  | atggtcctat | ggtgtgttac | tatgggagat  | 3240 |
| tgttagctta  | ggaggcacac  | cctactgcgg  | gatgacttgt | gcagaactct | acgagaagct  | 3300 |
| gccccagggc  | tacagactgg  | agaagccccct | gaactgtgat | gatgagggtg | atgatctaata | 3360 |
| gagacaatgc  | tggcggggaga | agccttatga  | gaggccatca | tttgcccaga | tattggtgtc  | 3420 |
| cttaaacaga  | atgttagagg  | agcgaaagac  | ctacgtgaat | accacgcttt | atgagaagtt  | 3480 |
| tacttatgca  | ggaattgact  | gttctgctga  | agaagcggcc | taggacagaa | catctgtata  | 3540 |
| ccctctgttt  | cccttttact  | ggcatgggag  | acccttgaca | actgctgaga | aaacatgcct  | 3600 |
| ctgcccagg   | atgtgatata  | taagtgtaca  | tatgtgctgg | aattctaaca | agtcataagg  | 3660 |
| taatatattaa | gacactgaaa  | aatctaagtg  | atataaatca | gattcttctc | tctcatttta  | 3720 |
| tccctcacct  | gtagcatgcc  | agtcgccgtt  | catttagtca | tgtgaccact | ctgtcttgtg  | 3780 |
| ttccacagc   | ctgcaagttc  | agtcaggat   | gctaacatct | aaaaatagac | ttaaatctca  | 3840 |
| ttgcttaca   | gcctaagaat  | cttttagagaa | gtatacataa | gtttaggata | aaataatggg  | 3900 |
| attttctttt  | cttttctctg  | gtaatatatt  | cttgtatatt | ttagaaata  | acagaaagcc  | 3960 |
| tgggtgacat  | ttgggagaca  | tgtgacattt  | atatattgaa | ttaatatccc | tacatgtatt  | 4020 |
| gcacattgta  | aaaagtttta  | gttttgatga  | gttgtgagtt | tacctgtgat | actgtaggca  | 4080 |
| cactttgcac  | tgatatatca  | tgagtgaata  | aatgtcttgc | ctactcaaaa | aaaaaaaa    | 4138 |

<210> 46  
 <211> 1204  
 <212> DNA  
 <213> Homo sapiens

|             |             |            |            |             |             |      |
|-------------|-------------|------------|------------|-------------|-------------|------|
| <400> 46    |             |            |            |             |             |      |
| cggaacgagg  | gcaacctgca  | cagccatgcc | cgggcaagaa | ctcaggacgg  | tgaatggctc  | 60   |
| tcagatgctc  | ctgggtgttg  | tggtgctctc | gtggctgccg | catggggggc  | ccctgtctct  | 120  |
| ggccgaggcg  | agccgcgcaa  | gtttcccggg | accctcagag | ttgcactccg  | aagactccag  | 180  |
| attccgagag  | ttgcggaaac  | gctacgagga | cctgctaacc | aggctgcggg  | ccaaccagag  | 240  |
| ctgggaagat  | tcgaacaccg  | acctcgtccc | ggccccgca  | gtccggatac  | tcacgccaga  | 300  |
| agtgcggctg  | ggatccggcg  | gccacctgca | cctgcgtatc | tctcggggcg  | cccttcccga  | 360  |
| ggggctcccc  | gaggcctccc  | gccttcaccg | ggctctgttc | cggtctgtcc  | cgacggcgctc | 420  |
| aaggctcgtg  | gacgtgacac  | gaccgctgcg | gcgtcagctc | agccttgcaa  | gaccccaagc  | 480  |
| gccccgcgtg  | cacctgcgac  | tgctgcggcc | gccgtcgcag | tcggaccaac  | tgctggcaga  | 540  |
| atcttcgtcc  | gcacggcccc  | agctggagtt | gcacttgccg | ccgcaagccg  | ccagggggcg  | 600  |
| ccgcagagcg  | cgtgcgcgca  | acggggacga | ctgtccgctc | ggggccgggc  | gttgctgccg  | 660  |
| tctgcacacg  | gtccgcgcgt  | cgctggaaga | cctgggctgg | gccgattggg  | tgctgtcgcc  | 720  |
| acgggagggtg | caagtgacca  | tgtgcatcgg | cgctgccccg | agccagtctc  | ggggcgcaaaa | 780  |
| catgcacgcg  | cagatcaaga  | cgagcctgca | ccgcctgaag | cccagacagg  | agccagcgcc  | 840  |
| ctgctgcgtg  | cccgccagct  | acaatcccat | ggtgctcatt | caaaaagaccg | acaccggggg  | 900  |
| gtcgtccag   | acctatgatg  | acttgtagc  | caaagactgc | cactgcatat  | gagcagtcct  | 960  |
| ggtccttcca  | ctgtgcacct  | gcgcggggga | ggcgacctca | gttgtcctgc  | cctgtgggaat | 1020 |
| gggctcaagg  | ttcctgagac  | acccgattcc | tgcccaaaaa | gctgtattta  | tataagtctg  | 1080 |
| ttatttatta  | ttaatattatt | ggggtgacct | tcttggggac | tcgggggctg  | gtctgatgga  | 1140 |
| actgtgtatt  | tatttaaaac  | tctggtgata | aaaataaagc | tgtctgaact  | gttaaaaaaa  | 1200 |
| aaaa        |             |            |            |             |             | 1204 |

<210> 47  
 <211> 3161  
 <212> DNA  
 <213> Homo sapiens

|             |            |             |            |             |             |     |
|-------------|------------|-------------|------------|-------------|-------------|-----|
| <400> 47    |            |             |            |             |             |     |
| aagctgcagt  | tagccaagat | cgcattcattg | cactccagcc | taggggacaa  | gagcgcgaga  | 60  |
| cttcattctca | aagattttta | aataatagct  | aaaggatagc | tctctaggctc | atccttagtt  | 120 |
| tattagtact  | gtacttaaaa | attatttttt  | taatagtcaa | ttttgggaga  | taattatttc  | 180 |
| tttccttata  | ttttccaatt | agttgggtgc  | taaaaataaa | tgttttgtct  | aatttttagat | 240 |

|             |             |             |             |             |             |      |
|-------------|-------------|-------------|-------------|-------------|-------------|------|
| caggatataca | ttcacaaaaag | cataaatcat  | agtctcacag  | gaaattcacc  | aattttccat  | 300  |
| atgtcgtgag  | ataactgtcc  | tttctacaac  | ctcataacaa  | tgaatttata  | taattaccta  | 360  |
| gattttctta  | gtgtgaatct  | acccattagt  | tttattttct  | tggtagttat  | ttttttccct  | 420  |
| cctctctgtt  | actattggcc  | ttaaaataca  | caggaggacg  | gttacagtgt  | cctaataagct | 480  |
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| aatttgcaac  | aagtggagtc  | catttagccc  | agtgggaaag  | tcttggaact  | cagggttacc  | 2280 |
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&lt;210&gt; 48

&lt;211&gt; 5722

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 48

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| tctgggcgcc | gactgggtgaa | gggccccgac  | ccttccagcc | cagctttccg | catcgaggat  | 300 |

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| ccccagtttg  | gaggcaagga  | ctgcgttggg  | gatgtaacag  | aaaaccagat  | ctgcaacaag  | 1740 |
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| agctaccctg  | atggcagctg  | gaaatgtggt  | gcttgtcccc  | ctgggttacag | tggaatggc   | 1860 |
| atccagtga   | cagatgttga  | tgagtgcaaa  | gaagtgcctg  | atgcctgctt  | caaccacaat  | 1920 |
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| accacatgac  | cccttctatt  | cttctccttt | cggcccat    | tataggaggc  | atacaccata  | 180  |
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| gaccacagct  | gcaaacctga  | gtctgtccag | tcagggtacct | gatgtgatgg  | tggtaggaga  | 1020 |
| gccaactctg  | atgggagggtg | agtttgggga | cgaggacgaa  | aggctaataca | ctagattaga  | 1080 |
| aaacacgcaa  | tatgatgcgg  | ccaacggcat | ggacgacgag  | gaggacttca  | acaattcacc  | 1140 |
| cgcgctgggg  | aacaacagcc  | cgtggaacag | taaacctccc  | gccactcaag  | agaccaaatac | 1200 |
| agaaaaacccc | ccaccccagg  | cttcccataa | agatgatcgg  | caccagaatc  | cactgtcaat  | 1260 |
| aggcccggtg  | gtgatcatta  | caattgcaaa | tctttactta  | caggagagga  | aacagaagag  | 1320 |
| ataaaaaactt | ttccatgcaa  | atatctattt | ctaaaccaca  | atgatctgat  | tttctttctt  | 1380 |
| ctttcttttt  | ttctaattga  | gaggattatt | cccagtaagc  | ttccatgacc  | ctttcttggg  | 1440 |



|            |            |            |            |            |            |      |
|------------|------------|------------|------------|------------|------------|------|
| ggccttcaca | ggtaatacag | atactggcac | tgattgtaat | taaaatgaga | gaaaactcta | 1500 |
| gcgcatcttc | tggcacggtt | ttaacaacgt | gtttgtgttg | aatttccttt | ttatgcatca | 1560 |
| aacgaaggcc | atattgtcca | taaatgctca | gtgctcagga | tctcattaat | atgccgaacc | 1620 |
| taactacaga | tgacttttta | atattgtaaa | atattttctg | ctttttgact | tgcatctgag | 1680 |
| agtttcttgt | ttcagtaaaa | aaagaaaaga | caaaaaaatc | agctttggaa | agtaatttaa | 1740 |
| atgtacctta | tttttttttt | ctttatgttt | tctttcattg | ggcaacagct | aagagggccc | 1800 |
| agcaaggtaa | tttatgggtg | agctgatgtc | aattggttct | tgtcttgagt | cgactcaatt | 1860 |
| tagcccaagt | gctgaaacaa | gaaatgtcat | ttttttcatc | aaagacacca | gggcagattt | 1920 |
| ttaagtaaag | aaagacaatt | ggacccttaa | gaatttatgc | atltgtaaag | ttgctgttga | 1980 |
| tccaaatatt | ttcaagccat | gtaatccatt | ggttttgtgg | gcagtttaat | aaacctgaac | 2040 |
| ctttgtgtgt | tttctaattg | tacctgagtt | gaccatcctt | tctttttata | gtatatctct | 2100 |
| tgtatgatat | tttgtaaagc | tctcacctgg | ttcttttatg | gggacttttc | gtttttgggc | 2160 |
| aactccagtg | tatttatgtg | aaactttata | agagaattaa | ttttccatt  | tgcatattaa | 2220 |
| tatgttcctc | cacacatgta | aaggcacagt | ggctccgtgt | gttaaaaaac | agctgtattt | 2280 |
| tatgtatgct | ttactgataa | gtgtgccaat | aataaactgt | gttaatgacc |            | 2330 |

<210> 50  
 <211> 622  
 <212> DNA  
 <213> Homo sapiens

|            |             |             |             |            |            |     |
|------------|-------------|-------------|-------------|------------|------------|-----|
| <400> 50   |             |             |             |            |            |     |
| ggcagagct  | cgtgccggcc  | ttcagttggt  | tcgggacgcy  | ccgagcttcg | ccgctcttcc | 60  |
| agcggctccg | ctgccagagc  | tagccccgagc | ccggttcttg  | ggcgaaaatg | cctgcccttc | 120 |
| acatcgaaga | tttgccagag  | aaggaaaaaac | tgaaaatgga  | agttgagcag | cttcgcaaag | 180 |
| aagtgaagtt | gcagagacaa  | caagtgtcta  | aatgttctga  | agaaataaag | aactatattg | 240 |
| aagaacgttc | tggagaggat  | cctctagtaa  | aggggaattcc | agaagacaag | aacctcttta | 300 |
| aagaaaaagg | cagctgtggt  | atttcataaa  | taacttggga  | gaaactgcat | cctaagtggg | 360 |
| agaactagtt | tgtttttagtt | ttcccagata  | aaaccaacat  | gctttttaag | gaaggaagaa | 420 |
| tgaaattaaa | aggagacttt  | cttaagcacc  | atatagatag  | ggttatgtat | aaaagcatat | 480 |
| gtgctactca | tctttgctca  | ctatgcagtc  | ttttttaaga  | gagcagagag | tatcagatgt | 540 |
| acaattatgg | aaataagaac  | attacttgag  | catgacactt  | ctttcagtat | attgcttgat | 600 |
| gcttcaaata | aagttttgtc  | tt          |             |            |            | 622 |

<210> 51  
 <211> 2500  
 <212> DNA  
 <213> Homo sapiens

|            |            |            |            |             |             |      |
|------------|------------|------------|------------|-------------|-------------|------|
| <400> 51   |            |            |            |             |             |      |
| cggggggatc | ttggctgtgt | gtctgcggat | ctgtagtgge | ggcgggcgcy  | gcgggcgcyg  | 60   |
| ggaggcagca | ggcgcgggag | cgggcgcgag | agcaggcgcy | ggcggtggcy  | gcgggcggtta | 120  |
| gacatgaacg | ccgcctcggc | gccggcggtg | cacggagagc | cccttctcgc  | gcgcgggcgcy | 180  |
| tttgtgtgat | tttgctaaaa | tgcatcacca | acagcgaatg | gctgccttag  | ggacgggacaa | 240  |
| agagctgagt | gatttactgg | atttcagtcg | gatgttttca | cctcctgtga  | gcagtgggaa  | 300  |
| aaatggacca | acttcttttg | caagtggaca | ttttactggc | tcaaattgtag | aagacagaag  | 360  |
| tagctcaggg | tcctggggga | atggaggaca | tccaagcccg | tccaggaact  | atggagatgg  | 420  |
| gactccctat | gaccacatga | ccagcaggga | ccttgggtca | catgacaatc  | tctctccacc  | 480  |
| ttttgtcaat | tccagaatac | aaagtaaaac | agaaaggggc | tcatactcat  | cttatgggag  | 540  |
| agaatcaaac | ttacagggtt | gccaccagca | gagtctcctt | ggaggtgaca  | tggatatggg  | 600  |
| caaccagga  | accctttcgc | ccaccaaac  | tggttcccag | tactatcagt  | attctagcaa  | 660  |
| taatccccga | aggaggcctc | ttcacagtag | tgccatggag | gtacagacaa  | agaaagtctg  | 720  |
| aaaagttcct | ccaggtttgc | catcttcagt | ctatgtctca | tcagcaagca  | ctgccgacta  | 780  |
| caatagggac | tcgccaggct | atccttcctc | caaaccagca | accagcactt  | tccttagctc  | 840  |
| cttcttcatg | caagatggcc | atcacagcag | tgacctttgg | agctcctcca  | gtgggatgaa  | 900  |
| tcagcctggc | tatgcaggaa | tggtgggcaa | ctcttctcat | attccacagt  | ccagcagcta  | 960  |
| ctgtagcctg | catccacatg | aacgtttgag | ctatccatca | cactcctcag  | cagacatcaa  | 1020 |
| ttccagtcct | cctccgatgt | ccactttcca | tcgtagtggg | acaaaccatt  | acagcacctc  | 1080 |
| ttcctgtacg | cctcctgcca | acgggacaga | cagtataatg | gcaaataagag | gaagcggggc  | 1140 |
| agccggcagc | tcccagactg | gagatgctct | ggggaaagca | cttgcttcga  | tctattctcc  | 1200 |
| agatcacact | aacaacagct | tttcatcaaa | cccttcaact | cctgttggct  | ctcctccatc  | 1260 |

|             |             |             |            |             |             |      |
|-------------|-------------|-------------|------------|-------------|-------------|------|
| tctctcagca  | ggcacagctg  | tttgggtctag | aaatggagga | caggcctcat  | cgtctcctaa  | 1320 |
| ttatgaagga  | cccttacact  | ctttgcaaag  | ccgaattgaa | gatcgttttag | aaagactgga  | 1380 |
| tgatgctatt  | catgtttctcc | ggaaccatgc  | agtgggcccc | tccacagcta  | tgcctgggtgg | 1440 |
| tcattggggac | atgcatggaa  | tcattggacc  | ttctcataat | ggagccatgg  | gtgggtctggg | 1500 |
| ctcagggtat  | ggaaccggcc  | ttctttcagc  | caacagacat | tcactcatgg  | tggggaccca  | 1560 |
| tcgtgaagat  | ggcgtggccc  | tgagaggcag  | ccattctctt | ctgccaacc   | aggttccggt  | 1620 |
| tccacagctt  | cctgtccagt  | ctgcgacttc  | ccctgacctg | aaccacccc   | aggaccctta  | 1680 |
| cagaggcatg  | ccaccaggac  | tacaggggca  | gagtgtctcc | tctggcagct  | ctgagatcaa  | 1740 |
| atccgatgac  | gaggggtgatg | agaacctgca  | agacacgaaa | tcttcggagg  | acaagaaatt  | 1800 |
| agatgacgac  | aagaaggata  | tcaaataaat  | tactagcaat | aatgacgatg  | aggacctgac  | 1860 |
| accagagcag  | aaggcagagc  | gtgagaagga  | gcggaggatg | gccaacaatg  | cccagagagcg | 1920 |
| tctgcgggtc  | cgtgacatca  | acgaggcttt  | caaagagctc | ggccgcagtg  | tgcagctcca  | 1980 |
| cctcaagagt  | gacaagcccc  | agaccaagct  | cctgatectc | caccaggcgg  | tggccgctcat | 2040 |
| cctcagtctg  | gagcagcaag  | tccgagaaag  | gaatctgaat | ccgaaagctg  | cgtgtctgaa  | 2100 |
| aagaagggag  | gaagagaagg  | tgtcctcgga  | gcctccccct | ctctccttgg  | ccggcccaca  | 2160 |
| ccctggaatg  | ggagacgcac  | cgaatcacat  | gggacagatg | taaaagggtc  | caagttgcca  | 2220 |
| cattgcttca  | ttaaaacaag  | agaccacttc  | cttaacagct | gtattatctt  | aaaccacacat | 2280 |
| aaacacttct  | ccttaacccc  | cattttttgta | atataagaca | agtctgagta  | gttatgaatc  | 2340 |
| gcagacgcaa  | gaggtttcag  | cattcccaat  | tatcaaaaaa | cagaaaaaca  | aaaaaaagaa  | 2400 |
| agaaaaaagt  | gcaacttgag  | ggacgacttt  | ctttaacata | tcattcagaa  | tgtgcaaagc  | 2460 |
| agtatgtaca  | ggctgagaca  | cagcccagag  | actgaacggc |             |             | 2500 |

&lt;210&gt; 52

&lt;211&gt; 2875

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 52

|             |             |             |             |            |             |      |
|-------------|-------------|-------------|-------------|------------|-------------|------|
| gaattctccg  | gagctgaaaa  | aggatcctga  | ctgaaagcta  | gaggcattga | ggagcctgaa  | 60   |
| gattctcagg  | ttttaaaagac | gctagagtgc  | caaagaagac  | tttgaagtgt | gaaaaacattt | 120  |
| cctgtaattg  | aaacccaaaat | gtcattttata | gaccttacc   | agcacattat | agtggagcac  | 180  |
| cagtattccc  | acaagttttac | ggtagtgggtg | ttacgtgcc   | ccaaagtgc  | aaagggggcc  | 240  |
| tttgggtgaca | tgcttgatac  | tccagatccc  | tatgtggaac  | tttttatctc | tacaacccct  | 300  |
| gacagcagga  | agagaacaag  | acatttcaat  | aatgacataa  | accctgtgtg | gaatgagacc  | 360  |
| tttgaattta  | ttttggatcc  | taatcaggaa  | aatgttttgg  | agattacgtt | aatggatgcc  | 420  |
| aattatgtca  | tggatgaaac  | tctagggaca  | gcaacattta  | ctgtatcttc | tatgaagggtg | 480  |
| ggagaaaaaga | aagaagttcc  | ttttattttc  | aaccaagtca  | ctgaaatggg | tctagaaatg  | 540  |
| tctcttgaag  | tttgctcatg  | cccagacct   | cgatttagta  | tggctctgtg | tgatcaggag  | 600  |
| aagactttca  | gacaacagag  | aaaagaacac  | ataagggaga  | gcatgaagaa | actcttgggt  | 660  |
| ccaaagaata  | gtgaaggatt  | gcattctgca  | cgtgatgtgc  | ctgtggtagc | catattgggt  | 720  |
| tcagggtggg  | gtttccgagc  | catggtggga  | ttctctgggtg | tgatgaaggc | attatacgaa  | 780  |
| tcaggaattc  | tggattgtgc  | tacctacgtt  | gctgggtcttt | ctggctccac | ctgggtatatg | 840  |
| tcaaccttgt  | attctcaccc  | tgattttcca  | gagaaaagggc | cagaggagat | taatgaagaa  | 900  |
| ctaataaaaa  | atgttagcca  | caatcccctt  | ttacttctca  | caccacagaa | agttaaaaga  | 960  |
| tatgttgagt  | ctttatggaa  | gaagaaaagc  | tctggacaac  | ctgtcacctt | tactgacatc  | 1020 |
| tttgggatgt  | taataggaga  | aacactaatt  | cataatagaa  | tgaatactac | tctgagcagt  | 1080 |
| ttgaaggaaa  | aagttaatac  | tgcacaatgc  | cctttacctc  | ttttcacctg | tcttcatgtc  | 1140 |
| aaacctgacg  | tttcagagct  | gatgtttgca  | gattgggttg  | aatttagtcc | atacgaaatt  | 1200 |
| ggcatggcta  | aatatggtag  | ttttatggct  | ccgacttat   | ttggaagcaa | atTTTTtatg  | 1260 |
| ggaacagtcg  | ttaagaagta  | tgaagaaaac  | cccttgcat   | tcttaatggg | tgtctggggc  | 1320 |
| agtgcctttt  | ccatattgtt  | caacagagtt  | ttgggcgttt  | ctggttcaca | aagcagaggc  | 1380 |
| tccacaatgg  | aggaagaatt  | agaaaatatt  | accacaaagc  | atattgtgag | taatgatagc  | 1440 |
| tcggacagtg  | atgatgaatc  | acacgaaccc  | aaaggcactg  | aaaatgaaga | tgctggaagt  | 1500 |
| gactatcaaa  | gtgataatca  | agcaagttgg  | attcatcgta  | tgataatggc | cttggtgagt  | 1560 |
| gattcagctt  | tattcaatac  | cagagaagga  | cgtgctggga  | aggtacacaa | cttcatgctg  | 1620 |
| ggcttgaatc  | tcaatacatc  | ttatccactg  | tctcctttga  | gtgactttgc | cacacaggac  | 1680 |
| tcctttgatg  | atgatgaact  | ggatgcagct  | gtagcagatc  | ctgatgaatt | tgatcgaaata | 1740 |
| tatgagcctc  | tggatgtcaa  | aagtaaaaag  | attcatgtag  | tggacagtgg | gctcacattt  | 1800 |
| aacctgccgt  | atcccttgat  | actgagacct  | cagagagggg  | ttgatctcat | aatctccttt  | 1860 |
| gacttttctg  | caaggccaag  | tgactctagt  | cctccgttca  | aggaacttct | acttgcagaa  | 1920 |
| aagtgggcta  | aaatgaacaa  | gctccccctt  | ccaaagattg  | atccttatgt | gtttgatcgg  | 1980 |

|            |             |             |            |            |            |      |
|------------|-------------|-------------|------------|------------|------------|------|
| gaagggctga | aggagtgcta  | tgtcttttaa  | cccaagaatc | ctgatatgga | gaaagattgc | 2040 |
| ccaaccatca | tccactttgt  | tctggccaac  | atcaacttca | gaaagtacaa | ggctccaggt | 2100 |
| gttccaaggg | aaactgagga  | agagaaagaa  | atcgctgact | ttgatatttt | tgatgacca  | 2160 |
| gaatcaccat | tttcaacctt  | caatttttcaa | tatccaaatc | aagcattcaa | aagactacat | 2220 |
| gatcttatgc | acttcaatac  | tctgaacaac  | attgatgtga | taaaagaagc | catggttgaa | 2280 |
| agcattgaat | atagaagaca  | gaatccatct  | cgttgctctg | tttcccttag | taatggtgag | 2340 |
| gcaagaagat | ttttcaacaa  | ggagtttcta  | agtaaaccce | aagcatagtt | catgtactgg | 2400 |
| aaatggcagc | agtttctgat  | gctgaggcag  | tttgcaatcc | catgacaact | ggatttaaaa | 2460 |
| gtacagtaca | gatatcgta   | ctgatcatga  | gagactggct | gatactcaaa | gttgcagtta | 2520 |
| cttagctgca | tgagaataat  | actattataa  | gttaggtgac | aaatgatgtt | gattatgtaa | 2580 |
| ggatatactt | agctacattt  | tcagtcagta  | tgaacttcct | gatacaaatg | tagggatata | 2640 |
| tactgtattt | ttaaaccattt | ctcaccaact  | ttcttatgtg | tggtcttttt | aaaaattttt | 2700 |
| tttcttttaa | aatattttaac | agttcaatct  | caataagacc | tcgcattatg | tatgaatggt | 2760 |
| attcactgac | tagattttatt | cataccatga  | gacaacacta | tttttattta | tatatgcata | 2820 |
| tatatacata | catgaaataa  | atacatcaat  | ataaaaaata | aaaaaaacgg | aattc      | 2875 |

<210> 53  
 <211> 1142  
 <212> DNA  
 <213> Homo sapiens

|            |            |             |             |             |            |      |
|------------|------------|-------------|-------------|-------------|------------|------|
| <400> 53   |            |             |             |             |            |      |
| gccgccagcg | gctttctcgg | acgccttgcc  | cagcggggcg  | cccgaccccc  | tgaccatgg  | 60   |
| accccgctcg | ccccctgggg | ctgtcgattc  | tgtgtctttt  | cctgacggag  | gctgcactgg | 120  |
| gcgatgctgc | tcaggagcca | acaggaaata  | acgcggagat  | ctgtctcctg  | cccctagact | 180  |
| acggaccctg | ccgggcccta | cttctccgtt  | actactacga  | caggtacacg  | cagagctgcc | 240  |
| gccagttcct | gtacgggggc | tgcgagggca  | acgccaacaa  | tttctacacc  | tgggaggctt | 300  |
| gcgacgatgc | ttgctggagg | atagaaaaag  | ttcccaaagt  | ttgccggctg  | caagtgagtg | 360  |
| tggacgacca | gtgtgagggg | tccacagaaa  | agtatttctt  | taatctaagt  | tccatgacat | 420  |
| gtgaaaaatt | cttttccggg | gggtgtcacc  | ggaaccggat  | tgagaacagg  | tttccagatg | 480  |
| aagctacttg | tatgggcttc | tgcgcaccaa  | agaaaattcc  | atcattttgc  | tacagtccaa | 540  |
| aagatgaggg | actgtgctct | gccaatgtga  | ctcgctatta  | ttttaatcca  | agatacagaa | 600  |
| cctgtgatgc | tttcacctat | actggctgtg  | gagggaaatga | caataacttt  | gtagcagggg | 660  |
| aggattgcaa | acgtgcatgt | gcaaaaagctt | tgaaaaagaa  | aaagaagatg  | ccaaagcttc | 720  |
| gctttgccag | tagaatccgg | aaaattcgga  | agaagcaatt  | ttaaaccattc | ttaatatgtc | 780  |
| atcttgtttg | tctttatggc | ttatttgcct  | ttatggttgt  | atctgaagaa  | taatatgaca | 840  |
| gcatgaggaa | acaaatcatt | ggtgatttat  | tcaccagttt  | ttattaatac  | aagtcacttt | 900  |
| ttcaaaaatt | tggatttttt | tatatataac  | tagctgctat  | tcaaatgtga  | gtctaccatt | 960  |
| tttaatttat | ggttcaactg | tttgtgagac  | gaattcttgc  | aatgcataag  | atataaaagc | 1020 |
| aaatatgact | cactcatttc | ttggggctgt  | attcctgatt  | tcagaagagg  | atcataactg | 1080 |
| aaacaacata | agacaatata | atcatgtgct  | tttaacatat  | ttgagaataa  | aaaggactag | 1140 |
| cc         |            |             |             |             |            | 1142 |

<210> 54  
 <211> 7787  
 <212> DNA  
 <213> Homo sapiens

|             |             |             |            |            |            |     |
|-------------|-------------|-------------|------------|------------|------------|-----|
| <400> 54    |             |             |            |            |            |     |
| gagacaaagg  | ctgccgtcgg  | gacggggcgag | ttagggactt | gggtttgggc | gaacaaaagg | 60  |
| tgagaaggac  | aagaaggggac | cgggcatggg  | cagcagggga | gccccgcggg | cgcgcgtcct | 120 |
| cgggagtggc  | gccgtgacac  | gcatggtttc  | cccggacccg | cggcggcgct | gacttccgcg | 180 |
| agtcggagcg  | gactcggcg   | agtcggggac  | tgcgctggaa | caatggataa | cttcttcacc | 240 |
| gagggaaacac | gggtctggct  | gagagaaaat  | ggccagcatt | ttccaagtac | tgtaaattcc | 300 |
| tgtgcagaag  | gcatcgctgt  | cttccggaca  | gactatggtc | aggtattcac | ttacaagcag | 360 |
| agcacaatta  | cccaccagaa  | ggtgactgct  | atgcacccca | cgaacgagga | gggcgtggat | 420 |
| gacatggcgt  | ccttgacaga  | gctccatggc  | gtctccatca | tgtataactt | attccagcgg | 480 |
| tataagagaa  | atcaaatata  | tacctacatc  | ggctccatcc | tggcctccgt | gaacccttac | 540 |
| cagcccatcg  | ccgggctgta  | cgagcctgcc  | accatggagc | agtacagccg | gcgccacctg | 600 |
| ggcgagctgc  | ccccgcacat  | cttcgccatc  | gccaacgagt | gctaccgctg | cctgtggaag | 660 |
| cgctacgaca  | accagtgcac  | cctcatcagt  | ggtgaaagtg | gggcaggtaa | aaccgaaagc | 720 |

|             |             |             |             |            |             |      |
|-------------|-------------|-------------|-------------|------------|-------------|------|
| actaaattga  | tcctcaagtt  | tctgtcagtc  | atcagtcaac  | agtcttttga | attgtcctta  | 780  |
| aaggagaaga  | catcctgtgt  | tgaacgagct  | attcttgaaa  | gcagcccat  | catggaagct  | 840  |
| ttcggcaatg  | cgaagaccgt  | gtacaacaac  | aactctagtc  | gctttgggaa | gtttgttcag  | 900  |
| ctgaacatct  | gtcagaaaagg | aaatattcag  | ggcgggagaa  | ttgtagatta | tttattagaa  | 960  |
| aaaaaccgag  | tagtaaggca  | aaatcccggg  | gaaaggaatt  | atcacatatt | ttatgcaactg | 1020 |
| ctggcagggc  | tggaaacatga | agaaagagaa  | gaatttttatt | tatctacgcc | agaaaactac  | 1080 |
| cactacttga  | atcagtctgg  | atgtgtagaa  | gacaagacaa  | tcagtgacca | ggaatccttt  | 1140 |
| agggaagtta  | ttacggcaat  | ggacgtgatg  | cagttcagca  | aggaggaagt | tcgggaagtg  | 1200 |
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 <212> DNA  
 <213> Homo sapiens

<400> 55

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| caagctctgc  | taactgaatc  | tcacctaata  | tgcaggatca  | cattgcaaag  | ctttcactct  | 120  |
| ttcccacctt  | gcttggtggg  | aaatctcttc  | tgcggaatct  | cagaaagtaa  | agttccatcc  | 180  |
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| gacaattgtg  | catatcgtct  | aataataaaa  | acccatacta  | gcctatagaa  | aacaatattt  | 360  |
| gaataataaa  | aaccataact  | agcctataga  | aaacaatatt  | tgaaagattg  | ctaccactaa  | 420  |
| aaagaaaact  | actacaactt  | gacaagactg  | ctgcaaactt  | caattgggtca | ccacaacttg  | 480  |
| acaagggtgc  | tataaaacaa  | gattgctaca  | acttctagtt  | tatgtttatac | agcatatttc  | 540  |
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| ttactagaaa  | taaaatcatg  | acagctcaat  | atgaatgtta  | ccaaaagatt  | atgcaagacc  | 720  |
| ccattcaaca  | agcagaaggc  | gtttactgca  | acagaacctg  | ggatggatgg  | ctctgctgga  | 780  |
| acgatgttgc  | agcaggaact  | gaatcaatgc  | agctctgccc  | tgattacttt  | caggactttg  | 840  |
| atccatcaga  | aaaagttaca  | aagatctgtg  | accaagatgg  | aaactgggtt  | agacatccag  | 900  |
| caagcaacag  | aacatggaca  | aattataccc  | agtgtaatgt  | taacacccac  | gagaaaagtga | 960  |
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| tgcttatctc  | gcttggcata  | ttcttttatt  | tcaagagcct  | aagttgcaa   | aggattacct  | 1080 |
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| gaagaaaactg | gaatcaatac  | aaaatccaat  | ttggaaacag  | cttttccaac  | tcagaagctc  | 1800 |
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<400> 56

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|------------|-------------|-------------|-------------|-------------|-------------|------|
| acgcgtccga | agacattaag  | taaaaaattg  | gaactatgat  | ttttctttgt  | catttttttaa | 60   |
| aaaagaatta | ttttattaac  | ctgctggcat  | ataatctgga  | gttcttttca  | caaccttact  | 120  |
| ttttctgatt | tgctttattg  | aatgattgaa  | tactcatttc  | tttctaaaaa  | tatgttgtaa  | 180  |
| attctccctt | ggcaagattt  | ctccctatga  | gggtagttat  | tatttgagtc  | tgccaagtgg  | 240  |
| ttaccatggg | gcaaggtgcc  | atgatgtatt  | cttgggtgca  | ttgggttttt  | gcgcattgta  | 300  |
| aatttaagac | acttatagta  | agtggactca  | ttcatagatg  | agtttcagaa  | cctttttacgt | 360  |
| tctcggtaga | ggcttctgtc  | ggacaggcag  | aagagtgtat  | tcctcacttt  | tttttttgtc  | 420  |
| ttcaaattcc | agtaaggcat  | agcactttta  | agaaattaga  | attttttctat | catctatgca  | 480  |
| aatgatattt | atgttaatat  | taaatatctt  | atgttacact  | gggagtaatt  | tgagggtgcaa | 540  |
| ttatttttat | tactactttg  | aatagaggac  | cattatcctt  | ctttcttcag  | aaaactaaga  | 600  |
| agtaagtgtg | acttttaaaag | taagtatata  | tcagtgaagag | taggcttggt  | ttacaactat  | 660  |
| ttctagccag | tgagttgtgt  | tttcatgtct  | catcaaaaga  | caataccaca  | ttgcatcatt  | 720  |
| ttacaaaata | tgttgtcatt  | ttcatttcag  | ttgtaacata  | ggaaaataga  | tatttcctag  | 780  |
| atgatttctg | agtttctttac | tgcaaagaac  | agttataaat  | tggtatacat  | gtgtctctgt  | 840  |
| aatagggata | atattgatata | atctgttgct  | acatatattaa | gaatcattct  | atcttatgtt  | 900  |
| gtcttgaggc | caagattttac | cacgtttgcc  | cagtgtattg  | aattgggtgg  | agaaggtagt  | 960  |
| tccatgttcc | atgtgtagat  | ctttaagatt  | ttatctttga  | taactttaat  | agaatgtggc  | 1020 |
| tcagttctgg | tccttcaagc  | ctgtatgggt  | tggtttttca  | gtaggggaca  | gttgatgtgg  | 1080 |
| agtcaatctc | tttggtacac  | aggaagcttt  | ataaaatttc  | attcacgaat  | ctcttatttt  | 1140 |
| gggaagctgt | tttgcatatg  | agaagaacac  | tggtgaaata  | aggaactaaa  | gctttatata  | 1200 |
| ttgatcaagg | tgattctgaa  | agtttttaatt | tttaatgttg  | taatgttatg  | ttattgttaa  | 1260 |
| ttgtacttta | ttatgtattc  | aatagaaaat  | catgatttat  | taataaaaagc | ttaaattctc  | 1320 |
| atctaaaaaa | aaaaaaaaaa  | a           |             |             |             | 1341 |

<210> 57  
 <211> 3834  
 <212> DNA  
 <213> Homo sapiens

<400> 57

|            |            |            |            |            |            |      |
|------------|------------|------------|------------|------------|------------|------|
| cctgagacag | aggcagcagt | gatacccacc | tgagagatcc | tgtgtttgaa | caactgcttc | 60   |
| ccaaaacgga | aagtatttca | agcctaaacc | tttgggtgaa | aagaactctt | gaagtcatga | 120  |
| ttgcttcaca | gtttctctca | gctctcactt | tggtgcttct | cattaaagag | agtggagcct | 180  |
| gggtcttaca | cacctccacg | gaagctatga | cttatgatga | ggccagtgtc | tattgtcagc | 240  |
| aaaggtagac | acacctgggt | gcaattcaaa | acaaagaaga | gattgagtag | ctaaactcca | 300  |
| tattgagcta | ttcaccaagt | tattactgga | ttggaatcag | aaaagtcaac | aatgtgtggg | 360  |
| tctgggtagg | aaccagaaa  | cctctgacag | aagaagccaa | gaactgggct | ccagggtgaa | 420  |
| ccaacaatag | gcaaaaagat | gaggactgag | tgagagatca | catcaagaga | gaaaaagatg | 480  |
| tgggcatgtg | gaatgatgag | agggtgcagc | agaagaagct | tgccctatgc | tacacagctg | 540  |
| cctgtacca  | tacatcctgc | agtggccacg | gtgaatgtgt | agagaccatc | aataattaca | 600  |
| cttgcaagtg | tgacctgggc | ttcagtggac | tcaagtgtga | gcaaattgtg | aactgtacag | 660  |
| ccctggaatc | ccctgagcat | ggaagcctgg | tttgcagtca | cccactggga | aacttcagct | 720  |
| acaattcttc | ctgctctatc | agctgtgata | gggtgtacct | gccaagcagc | atggagacca | 780  |
| tgcagtgtat | gtcctctgga | gaatggagtg | ctcctattcc | agcctgcaat | gtgggtgagt | 840  |
| gtgatgctgt | gacaaatcca | gccaatgggt | tcgtggaatg | tttccaaaac | cctggaagct | 900  |
| tcccatggaa | cacaacctgt | acatttgact | gtgaagaagg | atttgaacta | atgggagccc | 960  |
| agagccttca | gtgtacctca | tctgggaatt | gggacaacga | gaagccaacg | tgtaaagctg | 1020 |
| tgacatgcag | ggcgtccgc  | cagcctcaga | atggctctgt | gaggtgcagc | cattcccctg | 1080 |
| ctggagagtt | caccttcaaa | tcattcctga | acttcacctg | tgaggaaggc | ttcatgttgc | 1140 |
| agggaccagc | ccaggttgaa | tgaccactc  | aagggcagtg | gacacagcaa | atcccagttt | 1200 |
| gtgaagcttt | ccagtgacac | gccttgacca | accccgagcg | aggctacatg | aattgtcttc | 1260 |
| ctagtgtctc | tggcagtttc | cgttatgggt | ccagctgtga | gttctcctgt | gagcaggggt | 1320 |
| ttgtgttgaa | gggatccaaa | aggctccaat | gtggccccac | aggggagtg  | gacaacgaga | 1380 |
| agcccacatg | tgaagctgtg | agatgcgatg | ctgtccacca | gccccgaag  | ggtttggtga | 1440 |
| ggtgtgctca | ttcccctatt | ggagaattca | cctacaagtc | ctcttggtgc | ttcagctgtg | 1500 |



|             |             |             |             |             |             |      |
|-------------|-------------|-------------|-------------|-------------|-------------|------|
| aggagggatt  | tgaattatat  | ggatcaactc  | aacttgagtg  | cacatctcag  | ggacaatgga  | 1560 |
| cagaagaggt  | tccttcctgc  | caagtggtaa  | aatgttcaag  | cctggcagtt  | ccgggaaaga  | 1620 |
| tcaacatgag  | ctgcagtggg  | gagcccggtg  | ttggcactgt  | gtgcaagttc  | gcctgtcctg  | 1680 |
| aaggatggac  | gctcaatggc  | tctgcagctc  | ggacatgtgg  | agccacagga  | cactgggtctg | 1740 |
| gcctgctacc  | tacctgtgaa  | gctcccactg  | agtccaacat  | tccttggtta  | gctggacttt  | 1800 |
| ctgctgctgg  | actctccctc  | ctgacattag  | caccatttct  | cctctggctt  | cggaaatgct  | 1860 |
| tacggaaagc  | aaagaaaatt  | gttcctgcca  | gcagctgcca  | aagccttgaa  | tcagacggaa  | 1920 |
| gctacaaaaa  | gccttcttac  | atcctttaag  | ttcaaaagaa  | tcagaaacag  | gtgcatctgg  | 1980 |
| ggaactagag  | ggatacactg  | aagttaacag  | agacagataa  | ctctcctcgg  | gtctctggcc  | 2040 |
| cttcttgctt  | actatgccag  | atgcctttat  | ggctgaaacc  | gcaacaccca  | tcaccacttc  | 2100 |
| aatagatcaa  | agtccagcag  | gcaaggacgg  | ccttcaactg  | aaaagactca  | gtgttccctt  | 2160 |
| tcctactctc  | aggatcaaga  | aagtgttggc  | taatgaaggg  | aaaggatatt  | ttcttccaag  | 2220 |
| caaagggtgaa | gagaccaaga  | ctctgaaatc  | tcagaattcc  | ttttctaact  | ctcccttgct  | 2280 |
| cgctgtaaaa  | tcttggcaca  | gaaacacaat  | atthttgtggc | tttctttctt  | ttgcccttca  | 2340 |
| cagtgtttcg  | acagctgatt  | acacagttgc  | tgtcataaga  | atgaataata  | attatccaga  | 2400 |
| gttttagagga | aaaaaatgac  | taaaaatatt  | ataacttaaa  | aaaatgacag  | atgttgaatg  | 2460 |
| cccacaggca  | aatgcatgga  | gggttggttaa | tggtgcaaat  | cctactgaat  | gctctgtgcg  | 2520 |
| agggttacta  | tgcacaattt  | aatcactttc  | atccctatgg  | gattcagtg   | ttcttaaaga  | 2580 |
| gttcttaagg  | attgtgatat  | ttttacttgc  | attgaatata  | ttataatctt  | ccatacttct  | 2640 |
| tcattcaata  | caagtgtggg  | agggacttaa  | aaaacttgta  | aatgctgtca  | actatgatat  | 2700 |
| ggtaaaagtt  | acttattcta  | gattaccccc  | tcattgttta  | ttacaaaatt  | atgttacatc  | 2760 |
| tgttttaaat  | ttatttcaaa  | aagggaactc  | attgtccctt  | agcaaggcat  | gatgttaacc  | 2820 |
| agaataaagt  | tctgagtgtt  | tttactacag  | ttgttttttg  | aaaacatggg  | agaattggag  | 2880 |
| agtaaaaaat  | gaatggaagg  | tttgatatatt | gtcagatatt  | ttttcagaaa  | tatgtgggtt  | 2940 |
| ccacgatgaa  | aaacttccat  | gaggccaaac  | gttttgaact  | aataaaaagca | taaatgcaaa  | 3000 |
| cacacaaagg  | tataatttta  | tgaatgtctt  | tggtggaaaa  | gaatacagaa  | agatggatgt  | 3060 |
| gctttgcatt  | cctacaaaga  | tggttgtcag  | atgtgatatg  | taaacataat  | tcttgtatat  | 3120 |
| tatggaagat  | tttaaatcca  | caatagaaac  | tcaccatgta  | aaagagtcac  | ctggtagatt  | 3180 |
| tttaacgaat  | gaagatgtct  | aatagttatt  | ccctatthtg  | tttcttctgt  | atgttagggg  | 3240 |
| gctctggaag  | agagggaatgc | ctgtgtgagc  | aagcatttat  | gtttatttat  | aagcagattt  | 3300 |
| aacaattcca  | aaggaatctc  | cagttttcag  | ttgatcactg  | gcaatgaaaa  | attctcagtc  | 3360 |
| agtaattgcc  | aaagctgctc  | tagccttgag  | gagtgtgaga  | atcaaaaactc | tcctacactt  | 3420 |
| ccattaactt  | agcatgtgtt  | gaaaaaaaaa  | gtttcagaga  | agttctggct  | gaacactggc  | 3480 |
| aacgacaaag  | ccaacagtca  | aaacagagat  | gtgataagga  | tcagaacagc  | agaggttctt  | 3540 |
| ttaaaggggc  | agaaaaactc  | tgggaaataa  | gagagaacaa  | ctactgtgat  | caggctatgt  | 3600 |
| atggaataca  | gtgttatttt  | ctttgaaatt  | gtttaagtgt  | tgtaaatatt  | tatgtaaact  | 3660 |
| gcattagaaa  | ttagctgtgt  | gaaataccag  | tgtggtttgt  | gtttgagttt  | tattgagaat  | 3720 |
| tttaaatatt  | aacttaaaat  | atthttataat | ttttaaagta  | tatatthatt  | taagcttatg  | 3780 |
| tcagacctat  | ttgacataac  | actataaagg  | ttgacaataa  | atgtgcttat  | gttt        | 3834 |

<210> 58  
 <211> 1679  
 <212> DNA  
 <213> Homo sapiens

|            |            |            |            |            |            |     |
|------------|------------|------------|------------|------------|------------|-----|
| <400> 58   |            |            |            |            |            |     |
| gtttgttggc | tgcggcagca | ggtagcaaag | tgacgccgag | ggcctgagtg | ctccagtagc | 60  |
| caccgcatct | ggagaaccag | cggttaccat | ggaggggatc | agtatataca | cttcagataa | 120 |
| ctacaccgag | gaaatgggct | caggggacta | tgactccatg | aaggaaccct | gtttccgtga | 180 |
| agaaaatgct | aatttcaata | aaatcttctt | gccaccatc  | tactccatca | tcttcttaac | 240 |
| tggcattgtg | ggcaatggat | tggtcatcct | ggatcatggg | taccagaaga | aactgagaag | 300 |
| catgacggac | aagtacaggc | tgcacctgtc | agtggccgac | ctcctctttg | tcatcacgct | 360 |
| tccttctctg | gcagttgatg | ccgtggcaaa | ctggtacttt | gggaacttcc | tatgcaaggc | 420 |
| agtccatgtc | atctacacag | tcaacctcta | cagcagtggt | ctcatcctgg | ccttcatcag | 480 |
| tctggaccgc | tacctggcca | tcgtccacgc | caccaacagt | cagaggccaa | ggaagctgtt | 540 |
| ggctgaaaag | gtggtctatg | ttggcgctct | gatccctgcc | ctcctgctga | ctattcccga | 600 |
| cttcatcttt | gccaacgtca | gtgaggcaga | tgacagatat | atctgtgacc | gcttctaccc | 660 |
| caatgacttg | tgggtgggtg | tgthccagtt | tcagcacatc | atgggtggcc | ttatcctgcc | 720 |
| tggatattgc | atcctgtcct | gctattgcat | tatcatctcc | aagctgtcac | actccaaggg | 780 |
| ccaccagaag | cgcaaggccc | tcaagaccac | agtcaccttc | atcctggctt | tcttcgcttg | 840 |
| ttggctgcct | tactacattg | ggatcagcat | cgactccttc | atcctcctgg | aaatcatcaa | 900 |

|             |             |            |            |             |            |      |
|-------------|-------------|------------|------------|-------------|------------|------|
| gcaagggtgt  | gagtttgaga  | acactgtgca | caagtggatt | tccatcacccg | aggccctagc | 960  |
| tttcttccac  | tgttgtctga  | accccatcct | ctatgctttc | cttgagacca  | aatttaaaac | 1020 |
| ctctgcccag  | cacgcactca  | cctctgtgag | cagagggtcc | agcctcaaga  | tcctctccaa | 1080 |
| aggaaagcga  | ggtggacatt  | catctgtttc | cactgagtct | gagtcctcaa  | gttttcactc | 1140 |
| cagctaacac  | agatgtaaaa  | gacttttttt | tatacgataa | ataacttttt  | tttaagttac | 1200 |
| acatttttca  | gatataaaaag | actgaccaat | attgtacagt | ttttattgct  | tggtggattt | 1260 |
| ttgtcttggt  | tttcttttagt | ttttgtgaag | tttaattgac | ttatttatat  | aaattttttt | 1320 |
| tgtttcatat  | tgatgtgtgt  | ctaggcagga | cctgtggcca | agttcttagt  | tgctgtatgt | 1380 |
| ctcgtggtag  | gactgtagaa  | aagggaactg | aacattccag | agcgtgtagt  | gaatcacgta | 1440 |
| aagctagaaa  | tgatccccag  | ctgtttatgc | atagataatc | tctccattcc  | cgtggaacgt | 1500 |
| ttttcctggt  | cttaagacgt  | gattttgctg | tagaagatgg | cacttataac  | caaagcccaa | 1560 |
| agtggatatag | aaatgctggg  | ttttcagttt | tcaggagtgg | gttgatttca  | gcacctacag | 1620 |
| tgtacagtct  | tgtattaagt  | tgtaataaaa | agtacatggt | aaacttactt  | agtgttatg  | 1679 |

<210> 59  
 <211> 2006  
 <212> DNA  
 <213> Homo sapiens

|             |             |             |            |             |             |      |
|-------------|-------------|-------------|------------|-------------|-------------|------|
| cttcccacca  | gcaaagacca  | cgactggaga  | gccgagccgg | aggcagctgg  | gaaacatgaa  | 60   |
| gagcgtcttg  | ctgctgacca  | cgctcctcgt  | gcctgcacac | ctggtggccg  | cctggagcaa  | 120  |
| taattatgcg  | gtggactgcc  | ctcaacactg  | tgacagcagt | gagtgcacaa  | gcagcccgcg  | 180  |
| ctgcaagagg  | acagtgtctg  | acgactgtgg  | ctgctgccga | gtgtgcgctg  | cagggcgggg  | 240  |
| agaaacttgc  | taccgcacag  | tctcaggcat  | ggatggcatg | aagtgtggcc  | cggggctgag  | 300  |
| gtgtcagcct  | tctaattggg  | aggatccttt  | tggtgaagag | tttggtatct  | gcaaagactg  | 360  |
| tccctacggc  | accttcggga  | tggtatgcag  | agagacctgc | aactgccagt  | caggcatctg  | 420  |
| tgacaggggg  | acgggaaaat  | gcctgaaatt  | ccccttcttc | caatattcag  | taaccaagtc  | 480  |
| ttccaacaga  | tttgtttctc  | tcacggagca  | tgacatggca | tctggagatg  | gcaatattgt  | 540  |
| gagagaagaa  | gttgtgaaag  | agaatgctgc  | cgggtctccc | gtaatgagga  | aatgggttaa  | 600  |
| tccacgctga  | tcccggctgt  | gatttctgag  | agaaggctct | attttcgtga  | ttgttcaaca  | 660  |
| cacagccaac  | atttttaggaa | ctttctagat  | atagcataag | tacatgtaat  | ttttgaagat  | 720  |
| ccaaattgtg  | atgcattggt  | gatccagaaa  | acaaaaagta | ggatacttac  | aatccataac  | 780  |
| atccatatga  | ctgaacactt  | gtatgtgttt  | gttaaatatt | cgaatgcatg  | tagattttgt  | 840  |
| aaatgtgtgt  | gtatagtaac  | actgaagaac  | taaaaatgca | atttaggtaa  | tcttacatgg  | 900  |
| agacaggtca  | accaaagagg  | gagctaggca  | aagctgaaga | ccgcagttag  | tcaaatttagt | 960  |
| tctttgactt  | tgatgtacat  | taatgttggg  | atatggaatg | aagacttaag  | agcaggagaa  | 1020 |
| gatggggagg  | gggtgggagt  | gggaaataaa  | atatttagcc | cttccttggg  | aggtagcttc  | 1080 |
| tctagaattt  | aattgtgctt  | tttttttttt  | tttggttttg | ggaaaagtca  | aaataaaaaca | 1140 |
| accagaaaac  | ccctgaagga  | agtaagatgt  | ttgaagctta | tggaaaatttg | agtaacaaac  | 1200 |
| agctttgaac  | tgagagcaat  | ttcaaaaggc  | tgctgatgta | gttcccgggt  | tacctgtatc  | 1260 |
| tgaaggacgg  | ttctggggca  | taggaaacac  | atacacttcc | ataaatagct  | ttaacgtatg  | 1320 |
| ccacctcaga  | gataaatcta  | agaagtattt  | taccacttgg | tggtttgtgt  | gtgtatgaag  | 1380 |
| gtaaatattt  | atatattttt  | ataaataaat  | gtgttagtgc | aagtcactct  | ccctacccat  | 1440 |
| atttatcatc  | ctcttgagga  | aagaaatcta  | gtattatttg | ttgaaaatgg  | ttagaataaaa | 1500 |
| aacctatgac  | tctataaggt  | tttcaaacat  | ctgaggcatg | ataaatattt  | tatccataat  | 1560 |
| tataggagtc  | actctggatt  | tcaaaaaatg  | tcaaaaaatg | agcaacagag  | ggaccttatt  | 1620 |
| taaacataag  | tgctgtgact  | tcgggtgaatt | ttcaatttaa | ggtatgaaaa  | taagttttta  | 1680 |
| ggaggtttgt  | aaaagaagaa  | tcaattttca  | gcagaaaaca | tgtcaacttt  | aaaatatagg  | 1740 |
| tggaattagg  | agtatatttg  | aaagaatctt  | agcacaacaa | ggactgttgt  | actagatggt  | 1800 |
| cttaggaaat  | atctcagaag  | tattttattt  | gaagtgaaga | acttatttta  | gaattatttc  | 1860 |
| agtattttacc | tgtattttat  | tcttgaagtt  | ggccaacaga | gttgtgaatg  | tgtgtggaag  | 1920 |
| gcctttgaat  | gtaaagctgc  | ataagctggt  | agggttttgt | ttaaaaggac  | atgtttatta  | 1980 |
| ttgttcaata  | aaaaagaaca  | agatac      |            |             |             | 2006 |

<210> 60  
 <211> 5510  
 <212> DNA  
 <213> Homo sapiens

&lt;400&gt; 60

|             |             |             |             |             |             |      |
|-------------|-------------|-------------|-------------|-------------|-------------|------|
| agccggccgt  | ggtggctccg  | tgcgtccgag  | cgcccgctccg | cgccgctcggc | catggccaag  | 60   |
| cgctccaggg  | gccccggggc  | ccgctgcctg  | ttggcgctcg  | tgctgttctg  | cgccctggggg | 120  |
| acgctggccg  | tggtggccca  | gaagccgggc  | gcagggtgtc  | cgagccgctg  | cctgtgcttc  | 180  |
| cgcaccaccg  | tgcgtgtcat  | gcatctgtcg  | ctggaggccg  | tgcccgcctg  | ggcgccgcag  | 240  |
| acctccatcc  | tagatcttcg  | ctttaacaga  | atcagagaga  | tccaacctgg  | ggcattcagg  | 300  |
| cggctgagga  | acttgaacac  | attgcttctc  | aataataatc  | agatcaagag  | gatacctagt  | 360  |
| ggagcatttg  | aagacttgga  | aaatttaaaa  | tatctctatc  | tgtacaagaa  | tgagatccag  | 420  |
| tcaattgaca  | ggcaagcatt  | taagggaactt | gcctctctag  | agcaactata  | cctgcacttt  | 480  |
| aatcagatag  | aaactttgga  | cccagattcg  | ttccagcatc  | tcccgaagct  | cgagaggcta  | 540  |
| tttttgcata  | acaaccggat  | tacacattta  | gttccaggga  | catttaatac  | cttggaatct  | 600  |
| atgaagagat  | tgcgactgga  | ctcaaacaca  | cttcaactgcg | actgtgaaat  | cctgtggttg  | 660  |
| gcggattttg  | tgaaaaccta  | cgcggaagtgc | gggaacgcgc  | aggcagcggc  | catctgtgaa  | 720  |
| tatcccagac  | gcatccaggg  | acgctcagtg  | gcaaccatca  | ccccggaaga  | gctgaactgt  | 780  |
| gaaaggcccc  | ggatcacctc  | cgagccccag  | gacgcagatg  | tgacctcggg  | gaacaccgtg  | 840  |
| tacttcacct  | gcagagccga  | aggcaacccc  | aagcctgaga  | tcatctggct  | gcgaaacaat  | 900  |
| aatgagctga  | gcatgaagac  | agattcccgc  | ctaaacttgc  | tggacgatgg  | gacctgatg   | 960  |
| atccagaaca  | cacaggagac  | agaccaggg   | atctaccagt  | gcatggcaaa  | gaacgtggcc  | 1020 |
| ggagagggtga | agacgcaaga  | ggtgaccttc  | aggtaacttcg | ggtctccagc  | tgcacctact  | 1080 |
| tttghtaatcc | agccacagaa  | tacagagggtg | ctgggtgggg  | agagcgctcac | gctggagtgc  | 1140 |
| agcgccacag  | gccaccccc   | gcgcgggac   | tcttggaaga  | gaggtgaccg  | cacaccttg   | 1200 |
| ccagttgacc  | cgcggttgaa  | catcaecgct  | tctggcgggc  | ttacataca   | gaacgtcgta  | 1260 |
| cagggggaca  | gcggagagta  | tgcgtgctct  | gcgaccaaca  | acattgacag  | cgctccatgcc | 1320 |
| accgctttca  | tcatcgctca  | ggctcttctc  | cagttcactg  | tgacgcctca  | ggacagagtc  | 1380 |
| gttattgagg  | gccagaccgt  | ggatttccag  | tgtgaagcca  | agggcaacce  | gccgcccgtc  | 1440 |
| atcgccctgga | ccaagggagg  | gagccagctc  | tccgtggacc  | ggcggcacct  | ggtcctgtca  | 1500 |
| tcgggaacac  | ttagaatctc  | tggtgttgcc  | ctccacgacc  | agggccagta  | cgaatgccag  | 1560 |
| gctgtcaaca  | tcatcggttc  | ccagaaggtc  | gtggcccacc  | tgactgtgca  | gcccagagtc  | 1620 |
| acccccagtgt | ttgccagcat  | tcccagcgac  | acaacagtgc  | agggtggcgc  | caatgtgcag  | 1680 |
| ctcccgtgca  | gctcccaggg  | cgagcccag   | ccagccatca  | cctggaacaa  | gattgggggtt | 1740 |
| caggtgacag  | aaagtggaaa  | atttcacatc  | agccctgaag  | gattcttgac  | catcaatgac  | 1800 |
| gttggccctg  | cagacgcagg  | tgcgtatgag  | tgtgtggccc  | ggaacacccat | tgggtcggcc  | 1860 |
| tcggtgagca  | tggtgctcag  | tgtgaacggt  | cctgacgtca  | gtcgaaatgg  | agatccgttt  | 1920 |
| gtagctacct  | ccatcggtga  | agcgattgag  | actgttgaca  | gagctataaa  | ctcaacccga  | 1980 |
| acacatttgt  | ttgacagccg  | tcctcggttc  | ccaaatgatt  | tgctggcctt  | gttccgggat  | 2040 |
| ccgagggatc  | cttacacagt  | tgaacaggca  | cgggcgggag  | aaatctttga  | acggacattg  | 2100 |
| cagctcattc  | aggagcatgt  | acagcatggc  | ttgatggctg  | acctcaacgg  | aacaagttac  | 2160 |
| cactacaacg  | acctgggtgc  | tccacagtac  | ctgaacctca  | tgcgaaacct  | gtcgggctgt  | 2220 |
| accgcccacc  | ggcgcggtga  | caactgctcg  | gacatgtgct  | tccaccagaa  | gtaccggacg  | 2280 |
| cacgacggca  | cctgtaacaa  | cctgcagcac  | cccattgtgg  | gcgcctcgct  | gaccgccttc  | 2340 |
| gagcgctgc   | tgaaatccgt  | gtacgagaat  | ggcttcaaca  | cccctcgggg  | catcaacccc  | 2400 |
| caccgactgt  | acaacgggca  | cgcccttccc  | atgcgcgcgc  | tggtgtccac  | cacctgatc   | 2460 |
| gggacggaga  | ccgtcacacc  | cgacgagcag  | ttcaccaca   | tgctgatgca  | gtggggccag  | 2520 |
| ttcctggacc  | acgacctga   | ctccacgtgt  | gtggccctga  | gccaggcagc  | cttctccgac  | 2580 |
| ggacagcact  | gcagcaacgt  | gtgcagcaac  | gacccccct   | gcttctctgt  | catgatcccc  | 2640 |
| cccaatgact  | cccgggccag  | gagcgggggc  | cgctgcattg  | tcttcgtgcg  | ctccagccct  | 2700 |
| gtgtgcggca  | gcggcatgac  | ttcgctgctc  | atgaactccg  | tgtaccgcgc  | ggagcagatc  | 2760 |
| aaccagctca  | cctcctacat  | cgacgcattc  | aacgtgtacg  | ggagcacgga  | gcatgaggcc  | 2820 |
| cgcagcatcc  | gcgacctggc  | cagccaccgc  | ggcctgctgc  | ggcagggcat  | cgtgcagcgg  | 2880 |
| tccgggaagc  | cgtgctccc   | cttcgccacc  | gggcccgcga  | cggagtgcac  | gcgggacgag  | 2940 |
| aacgagagcc  | ccatccccctg | cttcctggcc  | ggggaccacc  | gcgccaacga  | gcagctgggc  | 3000 |
| ctgaccagca  | tgcacacgct  | gtggttccgc  | gagcacaacc  | gcattgccac  | ggagctgctc  | 3060 |
| aagctgaacc  | cgcactggga  | cggcgacacc  | atctactatg  | agaccaggaa  | gatcgtgggt  | 3120 |
| gcggagatcc  | agcacatcac  | ctaccagcac  | tggtccccga  | agatcctggg  | ggaggtgggc  | 3180 |
| atgaggacgc  | tgggagagta  | ccacggctac  | gaccccgcga  | tcaatgctgg  | catcttcaac  | 3240 |
| gccttcgcca  | cgcggccctt  | cagggtttggc | cacacgcttg  | tcaaccact   | gctttaccgg  | 3300 |
| ctggagcgaga | acttccagcc  | cattgcacaa  | gataacctcc  | cccttcacaa  | agctttcttc  | 3360 |
| tctcccttcc  | ggattgtgaa  | tgaggggcgc  | atcgatccgc  | ttctcagggg  | gctgttcggg  | 3420 |
| gtggcgggga  | aaatgcgtgt  | gccctcgcag  | ctgctgaaca  | cggagctcac  | ggagcggctg  | 3480 |
| ttctccatgg  | cacacacggg  | ggctctggac  | ctggcgccca  | tcaacatcca  | gcggggcccg  | 3540 |
| gaccacggga  | ttccacccta  | ccacgactac  | agggcttact  | gcaatctatc  | ggcggcacac  | 3600 |

|             |            |             |             |             |             |      |
|-------------|------------|-------------|-------------|-------------|-------------|------|
| acgttcgagg  | acctgaaaaa | tgagattaaa  | aaccctgaga  | tccgggagaa  | actgaaaagg  | 3660 |
| ttgtatggct  | cgacactcaa | catcgacctg  | tttccggcgc  | tcgtgggtgga | ggacctgggtg | 3720 |
| cctggcagcc  | ggctggggcc | caccctgatg  | tgtcttctca  | gcacacagtt  | caagcgccctg | 3780 |
| cgagatgggg  | acaggttgtg | gtatgagaac  | cctgggggtgt | tctccccggc  | ccagctgact  | 3840 |
| cagatcaagc  | agacgtcgct | ggccaggatc  | ctatgcgaca  | acgcggacaa  | catcaccctg  | 3900 |
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| cagttcaatg  | ccttttccta | tcatttccga  | ggcagacggg  | ctcttgagtt  | cagctaccag  | 4080 |
| gaggacaagc  | cgaccaagaa | aacaagacca  | cggaaaatac  | ccagtgttgg  | gagacagggg  | 4140 |
| gaacatctca  | gcaacagcac | ctcagccttc  | agcacacgct  | cagatgcac   | tgggacaaat  | 4200 |
| gacttcagag  | agtttgttct | ggaaatgcag  | aagaccatca  | cagacctcag  | aacacagata  | 4260 |
| aagaaacttg  | aatcacggct | cagtaccaca  | gagtgcgtgg  | atgccggggg  | cgaatctcac  | 4320 |
| gccaaacaaca | ccaagtggaa | aaaagatgca  | tgcaccattt  | gtgaatgcaa  | agacgggcag  | 4380 |
| gtcacctgct  | tcgtggaagc | ttgccccct   | gccacctgtg  | ctgtccccgt  | gaacatccca  | 4440 |
| ggggcctgct  | gtccagtctg | cttacagaag  | agggcggagg  | aaaagcccta  | ggctcctggg  | 4500 |
| aggctcctca  | gagtttgtct | gctgtgccat  | cgtgagatcg  | ggtggccgat  | ggcagggagc  | 4560 |
| tgcggactgc  | agaccaggaa | acaccagaa   | ctcgtgacat  | ttcatgacaa  | cgtccagctg  | 4620 |
| gtgctgttac  | agaaggcagt | gcaggaggct  | tccaaccaga  | gcactctgcg  | agaaggaggc  | 4680 |
| acagcagggtg | cctgaaggga | agcaggcagg  | agtcctagct  | tcacgttaga  | cttctcaggt  | 4740 |
| ttttatttaa  | ttcttttaaa | atgaaaaaatt | ggtgctacta  | ttaaattgca  | cagttgaatc  | 4800 |
| atttaggcgc  | ctaaattggg | tttgccctcc  | aacaccattt  | ctttttaaat  | aaagcaggat  | 4860 |
| acctctatat  | gtcagccttg | ccttggttcag | atgccaggag  | ccggcagacc  | tgtcaccctg  | 4920 |
| aggtgggggtg | agtctcggag | ctgccagagg  | ggctcaccca  | aatcggggtt  | ccatcacaa   | 4980 |
| ctatgtttta  | aaagaaaatt | ggtgtttggc  | aaacggaaca  | gaacctttga  | tgagagcggt  | 5040 |
| cacaggggaca | ctgtctgggg | gtgcagtgca  | agccccggc   | ctcttccctg  | ggaacctctg  | 5100 |
| aactcctcct  | tcctctgggc | tctctgtaac  | atttcaccac  | acgtcagcat  | ctaataccaa  | 5160 |
| gacaaacatt  | cccgtgctc  | gaagcagctg  | tatagcctgt  | gactctccgt  | gtgtcagctc  | 5220 |
| cttccacacc  | tgattagaac | attcataagc  | cacatttaga  | aacagatttg  | ctttcagctg  | 5280 |
| tcacttgcac  | acatactgcc | tagttgtgaa  | ccaaatgtga  | aaaaacctcc  | ttcatcccat  | 5340 |
| tgtgtatctg  | atacctgccg | agggccaagg  | gtgtgtgttg  | acaacgccgc  | tcccagccgg  | 5400 |
| ccctgggttg  | gtccacgtcc | tgaacaagag  | ccgcttccgg  | atggctcttc  | ccaaggagg   | 5460 |
| aggagctcaa  | gtgtcgggaa | ctgtctaact  | tcaggttgtg  | tgagtgcgtt  |             | 5510 |

&lt;210&gt; 61

&lt;211&gt; 3864

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 61

|             |             |             |             |             |             |      |
|-------------|-------------|-------------|-------------|-------------|-------------|------|
| aattcgagga  | tccgggtacc  | atggcacaga  | gcgacagaga  | cattttattgt | tattttgtttt | 60   |
| ttggtggcaa  | aaagggaaaa  | tggcgaacga  | ctccccctgca | aaaagtctgg  | tggacatcga  | 120  |
| cctctcctcc  | ctgcgggatc  | ctgctgggat  | ttttgagctg  | gtggaagtgg  | ttggaaatgg  | 180  |
| cacctatgga  | caagtctata  | agggctcgaca | tgttaaaacg  | ggtcagttgg  | cagccatcaa  | 240  |
| agttatggat  | gtcactgagg  | atgaagagga  | agaaatcaaa  | ctggagataa  | atatgtctaaa | 300  |
| gaaatactct  | catcacagaa  | acattgcaac  | atattatggg  | gctttcatca  | aaaagagccc  | 360  |
| tccaggacat  | gatgaccaac  | tctggcttgt  | tatggagtgc  | tgtggggctg  | gggtccattac | 420  |
| agaccttgtg  | aagaacacca  | aagggaacac  | actcaaagaa  | gactggatcg  | cttacatctc  | 480  |
| cagagaaatc  | ctgaggggac  | tggcacatct  | tcacattcat  | catgtgattc  | accgggatat  | 540  |
| caagggccag  | aatgtgttgc  | tgactgagaa  | tgcagagggtg | aaacttggtg  | actttgggtg  | 600  |
| gagtgtctag  | ctggacagga  | ctgtggggcg  | gagaaatacg  | ttcataggca  | ctccctactg  | 660  |
| gatggctcct  | gaggtcatcg  | cctgtgatga  | gaaccagat   | gccacctatg  | attacagaag  | 720  |
| tgatcttttg  | tcttgtggca  | ttacagccat  | tgagatggca  | gaagggtgctc | cccctctctg  | 780  |
| tgacatgcat  | ccaatgagag  | cactgtttct  | cattcccaga  | aaccctcctc  | cccggctgaa  | 840  |
| gtcaaaaaaa  | tggctcgaaga | agtttttttag | ttttatagaa  | gggtgcctgg  | tgaagaatta  | 900  |
| catgcagcgg  | ccctctacag  | agcagctttt  | gaaacatcct  | tttataaggg  | atcagccaaa  | 960  |
| tgaaaggcaa  | gttagaatcc  | agcttaagga  | tcatatagat  | cgtaccagga  | agaagagagg  | 1020 |
| cgagaaagat  | gaaactgagt  | atgagtacag  | tgggagtggg  | gaagaagagg  | aggaagtggc  | 1080 |
| tgaacaggaa  | ggagagccaa  | gttccattgt  | gaacgtgcct  | ggtgagtcta  | ctcttcgccg  | 1140 |
| agatttctctg | agactgcagc  | aggagaacaa  | ggaacgttcc  | gaggctcttc  | ggagacaaca  | 1200 |
| gttactacag  | gagcaacagc  | tccgggagca  | ggaagaatat  | aaaaggcaac  | tgctggcaga  | 1260 |
| gagacagaag  | cggattgagc  | agcagaaaga  | acagaggcga  | cggctagaag  | agcaacaaag  | 1320 |

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|-------------|-------------|-------------|-------------|------------|-------------|------|
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| aaagaggcgt  | ctagaggagt  | tggagagaag  | gcgcaaagaa  | gaagaggaga | ggagacgggc  | 1440 |
| agaagaagaa  | aagaggagag  | ttgaaagaga  | acaggagtat  | atcaggcgac | agctagaaga  | 1500 |
| ggagcagcgg  | cacttggaag  | tccttcagca  | gcagctgctc  | caggagcagg | ccatgttact  | 1560 |
| gcatgaccat  | aggaggccgc  | acccgcagca  | ctcgcagcag  | ccgccaccac | cgcagcagga  | 1620 |
| aaggagcaag  | ccaagcttcc  | atgctcccga  | gccccaaagcc | cactacgagc | ctgctgaccg  | 1680 |
| agcgcgagag  | gttcctgtga  | gaacaacatc  | tcgctcccct  | gttctgtccc | gtcgagattc  | 1740 |
| cccactgcag  | ggcagtgggc  | agcagaatag  | ccaggcagga  | cagagaaact | ccaccagtat  | 1800 |
| tgagcccagg  | cttctgtggg  | agagagtggg  | gaagctgggtg | cccagacctg | gcagtggcag  | 1860 |
| ctcctcaggg  | tcagcaact   | caggatccca  | gcccgggtct  | caccctgggt | ctcagagtgg  | 1920 |
| ctccggggaa  | cgcttcagag  | tgagatcatc  | atccaaagtct | gaaggtcttc | catctcagcg  | 1980 |
| cctggaaaat  | gcagtgaaaa  | aacctgaaga  | taaaaaggaa  | gttttcagac | ccctcaagcc  | 2040 |
| tgctggcgaa  | gtggatctga  | ccgcactggc  | caaagagctt  | cgagcagtgg | aagatgtacg  | 2100 |
| gccacctcac  | aaagtaacgg  | actactcctc  | atccagttag  | gagtcgggga | cgacggatga  | 2160 |
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| cagagcagcg  | tcatctctga  | at ttgagcaa | tggtgaaacg  | gaatctgtga | aaaccatgat  | 2280 |
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| cgtccgccag  | actcagtccg  | ctagtagcac  | actccagaaa  | cacaaatctt | cctcctcctt  | 2400 |
| tacacctttt  | atagacccca  | gattactaca  | gattttctcca | tctagcggaa | caacagtgcg  | 2460 |
| atctgtgggtg | ggattttcct  | gtgatgggat  | gagaccagaa  | gccataaggc | aagatcctac  | 2520 |
| ccggaaaggc  | tcagtgggtca | atgtgaatcc  | taccaacact  | aggccacaga | gtgacacccc  | 2580 |
| ggagattcgt  | aaatacaaga  | agaggtttaa  | ctctgagatt  | ctgtgtgctg | ccttatgggg  | 2640 |
| agtgaatttg  | ctagtgggtg  | cagagagtgg  | cctgatgctg  | ctggacagaa | gtggccaagg  | 2700 |
| gaaggtctat  | cctcttatca  | accgaagacg  | at ttcaacaa | atggacgtac | ttgagggcctt | 2760 |
| gaatgtcctg  | gtgacaatat  | ctggcaaaaa  | ggataagtta  | cgtgtctact | at ttgtcctg | 2820 |
| gttaagaaat  | aaaatacttc  | acaatgatcc  | agaagttgag  | aagaagcagg | gatggacaac  | 2880 |
| cgtaggggat  | ttggaaggat  | gtgtacatta  | taaagttgta  | aaatatgaaa | gaatcaaatt  | 2940 |
| tctgggtgatt | gctttgaaga  | gttctgtgga  | agtctatgcg  | tgggcaccaa | agccatatca  | 3000 |
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| cactgtttgag | gaaggccaga  | ggttgaaagt  | gatctatgga  | tcctgtgctg | gattccatgc  | 3120 |
| tgttgatgtg  | gattcaggat  | cagtctatga  | catttatcta  | ccaacacatg | taagaaagaa  | 3180 |
| cccacactct  | atgatccagt  | gtagcatcaa  | accccatgca  | atcatcatcc | tccccaatca  | 3240 |
| agatggaatg  | gagcttctgg  | tgtgctatga  | agatgagggg  | gtttatgtaa | acacatatgg  | 3300 |
| aaggatcacc  | aaggatgtag  | ttctacagtg  | gggagagatg  | cctacatcag | tagcatatat  | 3360 |
| tcgatccaat  | cagacaatgg  | gctggggaga  | gaaggccata  | gagatccgat | ctgtggaaac  | 3420 |
| tggtcacttg  | gatgggtgtg  | tcatgcacaa  | aagggtctcaa | agactaaaat | tcttgtgtga  | 3480 |
| acgcaatgac  | aagggtgttct | ttgcctctgt  | tcggtctggg  | ggcagcagtc | aggtttat tt | 3540 |
| catgacctta  | ggcaggactt  | ctcttctgag  | ctggtagaag  | cagtgtgatc | cagggattac  | 3600 |
| tggcctccag  | agtcttcaag  | atcctgagaa  | cttggaattc  | cttgtaactg | gagctcggag  | 3660 |
| ctgcaccgag  | ggcaaccagg  | acagctgtgt  | gtgcagacct  | catgtgttgg | gttctctccc  | 3720 |
| ctccttctctg | ttcctcttat  | ataccagttt  | atccccattc  | tttttttttt | tcttactcca  | 3780 |
| aaataaatca  | aggctgcaat  | gcagctgggtg | ctgttcagat  | tccaaaaaaa | aaaaaaaaacc | 3840 |
| atggtaccog  | gatcctcgaa  | ttcc        |             |            |             | 3864 |

&lt;210&gt; 62

&lt;211&gt; 2494

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 62

|            |            |            |            |            |             |     |
|------------|------------|------------|------------|------------|-------------|-----|
| cacgaggcag | gggccatttt | acctccaggt | tggccctgct | caggaccagg | aggaaacacc  | 60  |
| tccagcccgc | gacctcctcc | cacaggggga | aaaggaaagc | aggaggacca | cagaagcttt  | 120 |
| ggcaccgagg | atccccgcag | tcttcacccg | cggagattcc | ggctgaagga | gctgtccagc  | 180 |
| gactacaccg | ctaagcgcag | ggagcccaag | cctccgcacc | ggattccgga | gcacaagctc  | 240 |
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| ctcgcagggg | tctctggatc | cacttgggca | atatcttctc | tctacaccaa | tgatgggtgac | 600 |
| atggaagctc | tcgaggctga | cctgaaacat | cgattttacc | gacaggagtg | ggacttggct  | 660 |

|             |             |             |            |             |             |      |
|-------------|-------------|-------------|------------|-------------|-------------|------|
| aagagcctac  | agaaaacccat | ccaagcagcg  | aggtctgaga | attactctct  | gaccgacttc  | 720  |
| tgggcctaca  | tgggttatctc | taagcaaacc  | agagaactgc | cggagtctca  | tttgtccaat  | 780  |
| atgaagaagc  | ccgtggaaga  | agggacacta  | ccctacccaa | tattttgcagc | cattgacaat  | 840  |
| gacctgcaac  | cttcctggca  | ggaggcaaga  | gcaccagaga | cctggttcga  | gttcacccct  | 900  |
| caccacgctg  | gcttctctgc  | actgggggccc | tttgtttcca | taacccactt  | cggaagcaaa  | 960  |
| ttcaagaagg  | gaagactggg  | cagaactcac  | cctgagagag | acctgacttt  | cctgagagggt | 1020 |
| ttatggggaa  | gtgctcttgg  | taacactgaa  | gtcattaggg | aatacatttt  | tgaccagtta  | 1080 |
| aggaatctga  | ccctgaaaagg | tttatggaga  | agggctgttg | ctaattgctaa | aagcattgga  | 1140 |
| caccttatctt | ttgcccgaatt | actgaggctg  | caagaaagtt | cacaagggga  | acatcctccc  | 1200 |
| ccagaagatg  | aaggcgggtga | gcctgaacac  | acctggctga | ctgagatgct  | cgagaattgg  | 1260 |
| accaggacct  | ccctggaaaa  | gcaggagcag  | ccccatgagg | accccgaaag  | gaaaggctca  | 1320 |
| ctcagtaact  | tgatggattt  | tgtgaagaaa  | acaggcattt | gcgcttcaaa  | gtgggaatgg  | 1380 |
| gggaccactc  | acaacttcct  | gtacaaacac  | ggtggcatcc | gggacaagat  | aatgagcagc  | 1440 |
| cggaagcacc  | tccacctggg  | ggatgctggg  | ttagccatca | acactccctt  | cccactcgtg  | 1500 |
| ctgccccoga  | cgcgggagggt | tcacctcatc  | ctctccttcg | acttcagtgc  | cggagatcct  | 1560 |
| ttcgagacca  | tccgggctac  | cactgactac  | tgccgccgcc | acaagatccc  | ctttccccaa  | 1620 |
| gtagaagagg  | ctgagctgga  | tttgtggtcc  | aaggcccccg | ccagctgcta  | catcctgaaa  | 1680 |
| ggagaaaactg | gaccagtggg  | gatacatctt  | ccctgtttca | acatagatgc  | ctgtggagggt | 1740 |
| gatattgagg  | catggagtga  | cacatacgac  | acattcaagc | ttgctgacac  | ctacactcta  | 1800 |
| gatctgggtg  | tgctactctt  | ggcattagcc  | agaagaatg  | tcagggaaaa  | caagaagaag  | 1860 |
| atccttagag  | agttgatgaa  | cgtggccggg  | ctctactacc | cgaaggatag  | tgcccgaagt  | 1920 |
| tgctgcttgg  | catagatgag  | cctcagcttc  | cagggcactg | tgggcctgtt  | ggtctactag  | 1980 |
| ggccctgaag  | tccacctggc  | cttctgttcc  | ttcactccct | tcagccacac  | gcttcatggc  | 2040 |
| cttgagttca  | ccttggctgt  | cctaacaggg  | ccaatcacca | gtgaccagct  | agactgtgat  | 2100 |
| tttgatagcg  | tcattcagaa  | gaagggtgcc  | aaggagctga | aggtggtgaa  | atttgtcctg  | 2160 |
| caggtccctc  | gggagatcct  | ggagctggag  | catgagtgtc | tgacaatcag  | aagcatcatg  | 2220 |
| tccaatgtcc  | agatggccag  | aatgaatgtg  | atagttcaga | ccaatgcctt  | ccactgctcc  | 2280 |
| tttatgactg  | cacttctagc  | cagtagctct  | gcacaagtta | gctctgtaga  | agtaagaact  | 2340 |
| tgggcttaaa  | tcatgggcta  | tctctccaca  | gccaaagtga | gctctgagaa  | tacaacaagt  | 2400 |
| gctcaataaa  | tgcttgctga  | ttgactgatg  | aaaaaaaaaa | aaaaaaaaaa  | aaaaaaaaaa  | 2460 |
| aaaaaaaaaa  | aaaaaaaaaa  | aaaaaaaaaa  | aaaa       |             |             | 2494 |

<210> 63  
 <211> 2415  
 <212> DNA  
 <213> Homo sapiens

|             |             |             |            |             |             |      |
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| <400> 63    |             |             |            |             |             |      |
| ggggaggggcg | cgggaggcg   | aggatgccgc  | cgcggtgct  | gccgccgccg  | ccacccgcgg  | 60   |
| gtccccggcg  | accctactcc  | agacccgagg  | atggagccgg | cgctggggcg  | tgcagctgct  | 120  |
| cccggcgcg   | ccccgaccag  | gtagctgggtg | tcacttcggt | gtggttgga   | gaagactttc  | 180  |
| tccccagctg  | cattcccga   | ggcgcccttt  | cgacctggag | gccgggtctg  | ctggccacag  | 240  |
| ggctgccgca  | ctggctggga  | ctgccagctg  | ggcctggaga | cgctgggtggc | tgtggactcc  | 300  |
| ccagcttgga  | gcagtccttc  | tttgacctca  | cccttggag  | aagcagcccc  | atgaagggtgc | 360  |
| ccagccatgc  | aatgttcctg  | gaaggccgtc  | ctcctccttg | ccctggcctc  | cattgccatc  | 420  |
| cagtacacgg  | ccatccgcac  | cttcaccgcc  | aagtcctttc | acacctgccc  | cgggctggca  | 480  |
| gaggccgggc  | tggccgagcg  | actgtgcgag  | gagagcccca | ccttcgccta  | caacctctcc  | 540  |
| cgcaagaccc  | acatcctcat  | cctggccacc  | acgcgcagcg | gctcctcctt  | cgtgggccag  | 600  |
| ctcttcaacc  | agcacctgga  | cgtcttctac  | ctgtttgagc | ccctctacca  | cgtccagaac  | 660  |
| acgtcatcc   | cccgtttcac  | ccagggaag   | agcccggccg | accggcgggg  | catgctaggc  | 720  |
| gccagccgcg  | acctcctgcg  | gagcctctac  | gactgcgacc | tctacttctt  | ggagaactac  | 780  |
| atcaagccgc  | cgccgggtcaa | ccacaccacc  | gacaggatct | tccgccgcgg  | ggccagccgg  | 840  |
| gtcctctgct  | cccggcctgt  | gtgcgacctt  | ccggggccag | ccgacctggg  | cctggaggag  | 900  |
| ggggactgtg  | tgcgcaagtg  | cgggctactc  | aacctgaccg | tggcgccga   | ggcgtgccgc  | 960  |
| gagcgcagcc  | acgtggccat  | caagacgggtg | cgctgccccg | aggtgaacga  | cctgcgcgcc  | 1020 |
| ctgggtggaag | accgcgatt   | aaacctcaag  | gtcatccagc | tggtccgaga  | ccccgcggc   | 1080 |
| attctggctt  | cgcgcagcga  | gaccttcgcg  | gacacgtacc | ggctctggcg  | gctctggtac  | 1140 |
| ggcaccggga  | ggaaacccta  | caacctggac  | gtgacgcagc | tgaccacggg  | gtgcgaggac  | 1200 |
| ttctccaaact | ccgtgtccac  | cggcctcatg  | cggcccccg  | ggctcaagg   | caagtacatg  | 1260 |
| ttggtgcgct  | acgaggacct  | ggctcggaac  | cctatgaaga | agaccgagga  | gatctacggg  | 1320 |
| ttcctgggca  | tcccgtgga   | cagccacgtg  | gcccgtgga  | tccagaacaa  | cacgcggggc  | 1380 |



|            |             |             |            |             |             |      |
|------------|-------------|-------------|------------|-------------|-------------|------|
| gacccccacc | tgaggcaagca | caaatacggc  | accgtgcgaa | actcggcggc  | cacggccgag  | 1440 |
| aagtggcgct | tccgcctctc  | ctacgacatc  | gtggcctttg | cccagaacgc  | ctgccagcag  | 1500 |
| gtgctggccc | agctgggcta  | caagatcgcc  | gcctcggagg | aggagctgaa  | gaacccctcg  | 1560 |
| gtcagcctgg | tgaggaggcg  | ggacttccgc  | cccttctcgt | gacccgggcg  | gtgcgggtgg  | 1620 |
| gggaggagg  | cgcaagggtg  | cgggttttgat | aaaatggacc | gtttttaact  | gttgcccttat | 1680 |
| taacccctcc | ctctcccacc  | tcattctcgt  | gtccttctcg | ccccagctc   | acccactcc   | 1740 |
| cttctgcccc | ttttttgtct  | ctgaaatttg  | cactacgtct | tggaaggaa   | tcactggggc  | 1800 |
| agagggcgcc | tgaagtaggg  | tcccgcctcc  | cccaccccat | tcagacacat  | ggatgttggg  | 1860 |
| tctctgtgcg | gacggtgaca  | atgtttacaa  | gcaccacatt | tacacatcca  | cacacgcaca  | 1920 |
| cgggcactcg | cgaggcgact  | tctcaagctt  | ttgaatgggt | gagtggtcgg  | gtatctagtt  | 1980 |
| tttgactgtg | cttactattc  | aaggtaagag  | gatacaaaca | agaggaccac  | ttgtctctaa  | 2040 |
| tttatgaatg | gtgtccatcc  | tttccccatc  | cctgcctcct | gcccctgacg  | cccatttccc  | 2100 |
| cccttagagc | agcgaaactg  | ccccctcctg  | cccgcctctg | cctgtcgggtg | aggcaggttt  | 2160 |
| ttactgtgag | gtgaacgtgg  | acctgtttct  | gtttccagtc | tgtggtgatg  | ctgtctgtct  | 2220 |
| gtctgagctc | cgtggccgcc  | cctggaccag  | tgatgactga | tgaatcttat  | gagcttctga  | 2280 |
| ttgatctcgg | ggtccatctg  | tgatatttct  | ttgtgccaaa | aagaaaaaaa  | aagagtggat  | 2340 |
| cagtttgcta | aatgaacatt  | gaaattgaaa  | tgctttatct | gtgttttctg  | taaataaaaag | 2400 |
| agtgaataaa | tcacc       |             |            |             |             | 2415 |

<210> 64  
 <211> 4198  
 <212> DNA  
 <213> Homo sapiens

|             |             |             |             |             |             |      |
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| <400> 64    |             |             |             |             |             |      |
| ctgctatcaa  | aaaggccata  | aggattttgt  | ccccaaattt  | cacatgagct  | accttgcttc  | 60   |
| aaactactga  | gatgaagggg  | gcaagattat  | ttgtccttct  | ttctagttaa  | tggagtgggg  | 120  |
| gcattgggct  | taacaacagt  | aagcattctt  | ggactatacc  | tgaggatggg  | aactctcaga  | 180  |
| agactatgcc  | ttctgcttca  | gttccctcaa  | ataaaaataca | aagtttgcaa  | atactgccaa  | 240  |
| ccactcgggt  | catgtcggcg  | gagatagcta  | caactccaga  | ggcaagaact  | tctgaagaca  | 300  |
| gtcttcttaa  | atcaaacctg  | cctccctcag  | aaacaagtgc  | acctgtgag   | gggtgtgagaa | 360  |
| atcaaactct  | cacatccaca  | gagaaagcag  | aaggagtggg  | caagttacag  | aatcttacc   | 420  |
| tcccaaccat  | cgctagcatc  | aagttcaatc  | ctggagcaga  | atcagtgggtc | ctttccaatt  | 480  |
| ctacactgaa  | atttcttcag  | agctttgcca  | gaaagtcaaa  | tgaacaagca  | acttctctaa  | 540  |
| acacagttgg  | aggcactgga  | ggcattggag  | gcgttggagg  | cactggaggc  | gtgggaaatc  | 600  |
| gagccccacg  | ggaaacatac  | ctcagccggg  | gtgacagcag  | ttccagccaa  | agaactgact  | 660  |
| acaaaaaatc  | aaatttcgaa  | acaactagag  | gaaagaattg  | gtgtgcttat  | gtacatacca  | 720  |
| ggttatctcc  | cacagtgaca  | ttggacaacc  | aggctactta  | tgtcccagggt | gggaaaggac  | 780  |
| cttgtggctg  | gaccgggtgga | tctgtcctc   | agagatctca  | gaagatatcc  | aatcctgtct  | 840  |
| ataggatgca  | acataaaaatt | gtcacctcat  | tggtattggag | gtgctgtcct  | ggatacagtg  | 900  |
| ggccgaaatg  | tcaactaaga  | gcccagggaac | agcaaagtgt  | gatacacacc  | aaccaggctg  | 960  |
| aaagtcatac  | agctgttggc  | agaggagtag  | ctgagcagca  | gcagcagcaa  | ggctgtgggtg | 1020 |
| accagaagt   | gatgcaaaaa  | atgactgatc  | aggtgaacta  | ccaggcaatg  | aaactgactc  | 1080 |
| ttctgcagaa  | gaagattgac  | aatatttctt  | tgactgtgaa  | tgatgtaagg  | aacacttact  | 1140 |
| cctccctaga  | aggaaaagtc  | agcgaagata  | aaagcagaga  | atttcaatct  | cttctaaaaag | 1200 |
| gtctaaaaatc | caaaagcatt  | aatgtactga  | taagagacat  | agtaagagaa  | caatttaaaa  | 1260 |
| tttttcaaaa  | tgacatgcaa  | gagactgtag  | cacagctctt  | caagactgta  | tcaagtctat  | 1320 |
| cagaggacct  | cgaaagcacc  | aggcaaataa  | ttcaaaaagt  | taatgaatct  | gtggtttcaa  | 1380 |
| tagcagccca  | gcaaaagtgt  | gttttggtgc  | aagagaatcg  | gcccactttg  | actgatatag  | 1440 |
| tggaactaag  | gaatcacatt  | gtgaatgtaa  | ggcaagaaat  | gactcttaca  | tgtgagaagc  | 1500 |
| ctattaaaga  | actagaagta  | aagcagactc  | athtagaaag  | tgctctagaa  | caggaacact  | 1560 |
| caagaagcat  | tctgtattat  | gaatccctca  | ataaaaactct | ttctaaattg  | aaggaagtac  | 1620 |
| atgagcagct  | tttatcaact  | gaacagggtat | cagaccagaa  | gaatgctcca  | gctgctgagt  | 1680 |
| cagtttagcaa | taatgtcact  | gagtacatgt  | ctactttaca  | tgaaaatata  | aagaagcaga  | 1740 |
| gtttgatgat  | gctgcaaatg  | tttgaagatt  | tgacacttca  | agaaagcaag  | attaacaatc  | 1800 |
| tcaccgtctc  | tttgagatg   | gagaaagagt  | ctctcagagg  | tgaatgtgaa  | gacatgttat  | 1860 |
| ccaaatgcag  | aaatgttttt  | aaatttcaac  | tttaaggacac | agaagagaat  | ttacatgtgt  | 1920 |
| taaatcaaac  | attggctgaa  | gttctctttc  | caatggacaa  | taagatggac  | aaaatgagtg  | 1980 |
| agcaactaaa  | tgatttgact  | tatgatatgg  | agatccttca  | acccttgctt  | gagcagggag  | 2040 |
| catcactcag  | acagacaatg  | acatatgaac  | aaccaaagga  | agcaatagtg  | ataaggaaaa  | 2100 |
| agatagaaaa  | tctgactagt  | gctgtcaata  | gtctaaattt  | tattatcaaa  | gaacttacia  | 2160 |



|             |             |             |            |             |             |      |
|-------------|-------------|-------------|------------|-------------|-------------|------|
| aaagacacaa  | cttacttaga  | aatgaagtac  | agggtcgtga | tgatgcctta  | gaaagacgta  | 2220 |
| tcaatgaata  | tgcccttagaa | atggaagatg  | gcctcaataa | gacaatgact  | attataaata  | 2280 |
| atgctattga  | tttcattcaa  | gataactatg  | ccctaaaaga | gactttaagt  | actattaagg  | 2340 |
| ataatagtga  | gatccatcat  | aaatgtacct  | ccgatatgga | aactattttg  | acattttattc | 2400 |
| ctcagttcca  | ccgtctgaat  | gattctattc  | agactttggg | caatgacaat  | cagagatata  | 2460 |
| actttgtttt  | gcaagtgcgc  | aagacccttg  | caggatttcc | cagagatgag  | aaactaaatc  | 2520 |
| agtccaactt  | ccaaaagatg  | tatcaaattg  | tcaatgaaac | cacttcccaa  | gtgagaaaat  | 2580 |
| accagcaaaa  | tatgagtcac  | ttggaagaaa  | aactactctt | aactaccaag  | atttccaaaa  | 2640 |
| atatttcagt  | tcggttgcaa  | gacattgagt  | ctaaagttac | ccagacgctc  | ataccttatt  | 2700 |
| aagtattaaa  | ttccagattt  | aaggcggttg  | caaatgagag | agatcaggct  | cttcaactgc  | 2760 |
| tcttttcgct  | taacaaaact  | ctccacgaag  | ttttaacaat | tatccatctt  | tcaattaact  | 2820 |
| gtgtgtcaga  | actgaatgct  | accatcccta  | agtggataaa | acattccctg  | ccagatatctc | 2880 |
| aactttcttca | gaaaggtcta  | acagaatttg  | tggaaccaat | aattcaaata  | aaaactcaag  | 2940 |
| ctgccctatc  | taattcaact  | tggtgtatag  | atcgatcggt | gcctggtagt  | ctggcgaatg  | 3000 |
| ttgtcaagtc  | tcagaagcaa  | gtaaaatcat  | tgccaaagaa | aattaacgca  | cttaagaaac  | 3060 |
| caacggtaaa  | tcttaccaca  | gtcctgatag  | gccggactca | aagaaacacg  | gacaacataa  | 3120 |
| tatatcctga  | ggagtattca  | agctgtagtc  | ggcatccgtg | ccaaaatggg  | ggcacgtgca  | 3180 |
| taaatggaag  | aactagcttt  | acctgtgcct  | gcagacatcc | ttttactggg  | gacaactgca  | 3240 |
| ctatcaagct  | tgtggaagaa  | aatgcttttag | ctccagattt | ttccaaagga  | tcttacagat  | 3300 |
| atgcacccat  | ggtggcattt  | tttgcattct  | atacgtatgg | aatgactata  | cctggctcta  | 3360 |
| tectgtttta  | taacttggat  | gtcaattatg  | gagcttcata | taccccaaga  | actggaaaat  | 3420 |
| ttagaattcc  | gtatcttggg  | gtatatgttt  | tcaagtacac | catcgagtca  | tttagtgctc  | 3480 |
| atattttctg  | atatttttagt | gttgatggaa  | tagacaagct | tgcatttgag  | tctgaaaata  | 3540 |
| ttaacagtga  | aatacactgt  | gatagggttt  | taactgggga | tgctttatta  | gaattaaatt  | 3600 |
| atgggcagga  | agtctgggta  | cgacttgcaa  | aaggaacaat | tccagccaag  | tttccccctg  | 3660 |
| ttactacatt  | tagtggctat  | ttattatatc  | gtacataagt | tagtatgaaa  | aacagactat  | 3720 |
| cacctttatt  | gagaaacagc  | cagtgttttc  | atztatcttt | gcttgccacat | ctgctctggt  | 3780 |
| ttgggttttt  | tacaggaaat  | gaaaatcaac  | ttgttttttt | aatatgagta  | aacttgtatg  | 3840 |
| tctatttttat | aaaattattt  | gaatattggt  | taatgtctga | atatgaaaga  | gttcttgatc  | 3900 |
| ctaaagaaat  | ttagtggcac  | agaaaacaaa  | gtgaatttgt | tagcataatt  | attcctattc  | 3960 |
| ttattttcttc | attttaagtc  | attgcaatgg  | aaagtaatat | tataaaacgg  | taattacaac  | 4020 |
| atattatcag  | tcacagtttt  | ctttccaatt  | aaacacttaa | cttttggtat  | tcctgtata   | 4080 |
| taaatatata  | acacacattt  | tctagattca  | caaatttaaa | taaattactc  | aaaaaatg    | 4140 |
|             |             |             |            |             |             | 4198 |

<210> 65  
 <211> 1664  
 <212> DNA  
 <213> Homo sapiens

|            |             |             |             |             |             |      |
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| gtcgccgcgc | ggccgcgggt  | gagccgcgatg | gagccccggg  | cggcggacgg  | ctgcttctctg | 60   |
| ggcgacgtgg | gtttctgggt  | ggagcggacc  | cctgtgcacg  | aggcagccca  | gcgggggtgag | 120  |
| agcctgcagc | tgcaacagct  | gatcgagagc  | ggcgccctgcg | tgaaccaggt  | caccgtggac  | 180  |
| tccatcacgc | ccctgcacgc  | agccagtctg  | caggggccag  | cgcggtgtgt  | gcagctgctg  | 240  |
| ctggcggctg | gggccaggt   | ggatgctcgc  | aacatcgacg  | gcagcacccc  | gctctgcgat  | 300  |
| gectgcgcct | cgggcagcat  | cgagtgtgtg  | aaagctcttgc | tgtcctacgg  | ggccaagggtc | 360  |
| aacctctccc | tgtacacagc  | gtccccctctg | cacgaggcca  | gctttccccg  | cctcctgagc  | 420  |
| accttggtct | cgacgcctctg | gatcaactga  | gccagggtgga | actcctgggg  | gacatggatc  | 480  |
| gcaatgaatt | cgaccagtat  | ttgaacactc  | ctggccaccc  | agactccgcc  | acaggggcca  | 540  |
| tgccctcag  | tgggcatgtt  | ccggtctccc  | aggtgacacc  | aacgggtccc  | acagagacca  | 600  |
| gcctcatctc | cgtcctggt   | gatgccacgg  | ccacgtacta  | caacagctac  | agtgtgtcat  | 660  |
| agagctggag | gcgccccgtc  | cggtcagccc  | tcgcgcctctc | tccttcttgt  | gccttgagtg  | 720  |
| gcagaggagc | cgtccagcca  | caccagcttt  | cctcccaccg  | ctcagggcag  | ggaggtctga  | 780  |
| actgcggccc | cagagccttt  | ggcctaagct  | ggactctcct  | tatccgagtg  | ccgcctctat  | 840  |
| ccccctcccc | acgttccagc  | ccctgcagcc  | cacatttttaa | gtatattcct  | tcaatgagt   | 900  |
| tttctctcag | ccccgagag   | ttgctgtctc  | ccagtggaa   | gttactgac   | gtcctttctt  | 960  |
| ggtagccatc | atcgaaacta  | atggggggac  | agacttgata  | gccaagggtcc | cttctgggtcc | 1020 |
| agttttctga | tttaggggtc  | tctcaagatt  | aataaaggaa  | gatggggaaa  | tttgactcat  | 1080 |
| taatgagctc | gctaacctac  | gatctgggtga | taattttgtg  | tgcacagccc  | aaggaccacg  | 1140 |
| aggctttctg | cactttctgc  | acccccctcc  | aaagtgacca  | caaaatttca  | aagggactca  | 1200 |

|             |            |             |            |            |             |      |
|-------------|------------|-------------|------------|------------|-------------|------|
| tacaatttga  | gaaaaaacag | tcaacctgat  | ttgagaaatt | aaccagtatg | gctaactata  | 1260 |
| tcacagaaaa  | tgggattgag | ttaaaactat  | tttattttta | atatacattt | taaagcagtt  | 1320 |
| cttttttttt  | tgttaatttg | tttattatac  | acacacttca | agagaatatg | cacagtctag  | 1380 |
| gccgggcacg  | gtggtcacg  | cctgtaatcc  | cagcactttg | ggaggccgag | gcatgtggat  | 1440 |
| cacctgaggt  | caggagtttg | agaccagcct  | agacaacatg | gtgaaacctt | gtctctatga  | 1500 |
| aaaatacaaaa | atttgctggg | agtgggtggtg | catgcctgta | atcccagcta | cttgggaaggc | 1560 |
| tgaggcagga  | gaatgtcttg | aacctaggag  | gtggagggtg | cagtgagctg | agattgcacc  | 1620 |
| attgcactcc  | agcctgtgca | acaagagtga  | aactccattt | caag       |             | 1664 |

<210> 66  
 <211> 2521  
 <212> DNA  
 <213> Homo sapiens

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| ggcagtggtg  | gcgtgggcaa | gtcagctctg  | actctacagt  | tcagtgtacga | tgagtttgtg  | 120  |
| gaggactatg  | agcctaccaa | agcagacagc  | tatcgggaaga | aggtagtgct  | agatggggag  | 180  |
| gaagtccaga  | tcgatatctt | agatacagct  | gggcaggagg  | actacgctgc  | aattagagac  | 240  |
| aactacttcc  | gaagtgggga | gggggttctc  | tgtgttttct  | ctattacaga  | aatggaatcc  | 300  |
| tttgacagta  | cagctgactt | caggagagcag | attttaagag  | taaaagaaga  | tgagaatggt  | 360  |
| ccatttctac  | tggttggtaa | caaatacagat | ttagaagata  | aaagacaggt  | ttctgtagaa  | 420  |
| gaggcaaaaa  | acagagctga | gcagtggaaat | gttaactacg  | tggaaacatc  | tgctaaaaca  | 480  |
| cgagctaattg | ttgacaaggt | attttttgat  | ttaatgagag  | aaattcgagc  | gagaaagatg  | 540  |
| gaagacagca  | aagaaaagaa | tggaaaaaag  | aagaggaaaa  | gtttagccaa  | gagaatcaga  | 600  |
| gaaagatgct  | gcattttata | atcaaagccc  | aaactccttt  | cttatcttga  | ccataactaat | 660  |
| aaatataatt  | tataagcatt | gccattgaag  | gcttaattga  | ctgaaattac  | tttaacattt  | 720  |
| tggaaattgt  | tgtatatcac | taaaagcatg  | aattggaact  | gcaatgaaag  | tcaaatttac  | 780  |
| tttaaaaaga  | aattaatatg | gcttcaccaa  | gaagcaaagt  | tcaacttatt  | tcataattgc  | 840  |
| ctacatttat  | catggtcctg | aatgtagcgt  | gtaagcttgt  | gtttcttggg  | cagcttttct  | 900  |
| tgaaattgaa  | gaggtgaaat | gggggtgggg  | agtgaggagga | aaggtgactt  | cctctggtgt  | 960  |
| ttattataaa  | gcttaaat   | tatatcattt  | taaaatgtct  | tggcttctta  | ctgccttgaa  | 1020 |
| aaatgacaat  | tgtgaacatg | atagttaaac  | taccactttt  | tttaaccatt  | attatgcaaa  | 1080 |
| atttagaaga  | aaagtatttg | gcatggttgt  | tgcataatgt  | taaactgaga  | gtaattcatc  | 1140 |
| tgtgaatctg  | ctttaattac | ctggtgagta  | acttagaaaa  | gtggtgtaaa  | cttgtacatg  | 1200 |
| gaattttttg  | aatatgcctt | aatttagaaa  | ctgaaaaata  | tccggttata  | tcattctggg  | 1260 |
| tgtgttctta  | ctgacaccag | gggtccgctg  | ccccatgtgt  | cctggtgaga  | aaatatatgc  | 1320 |
| ctggcacagc  | ttttgtatag | aaaattcttg  | agaagtaact  | gtccgctaga  | agtctgtcca  | 1380 |
| aattttaa    | gtgtgccata | ttctggttct  | tgaaaaataag | attccagagc  | tctttgatcg  | 1440 |
| cttttaataa  | actgcaagtt | catttttaatt | gaagggccag  | catatatact  | tgcaagataa  | 1500 |
| ttttcagctg  | caaggattca | gcaccagtta  | tgtttgaatg  | aacctctctt  | ttctctgaga  | 1560 |
| ttctggtccc  | tggaaatccc | tttctgctag  | tggtagcat   | gtaagtgtta  | agttttta    | 1620 |
| ctgggagcag  | ggcataggaa | gaaaatgtca  | gtagtgttaa  | tgcattttgc  | actagaacgc  | 1680 |
| ttcgggaaaa  | tattcatgct | tgccatctgt  | tcatttctaa  | atttatattc  | ataaagttac  | 1740 |
| agtttgatac  | aggaattatt | aggagtaatt  | cttttctgtt  | tctgtttata  | atgaagaaca  | 1800 |
| ctgtagctac  | attttcagaa | gttaacatca  | agccatcaaa  | cctgggtata  | gtgcagaaga  | 1860 |
| cgtggcacac  | actgaccaca | cattaggtctg | tgtcaccatt  | gtgtggtgta  | cctgctggaa  | 1920 |
| gaattctagc  | atgctacttg | gggacataat  | ttcagtggga  | aatatgccac  | tgaccgattt  | 1980 |
| tttttttttt  | cctctttgca | gtggggctag  | gacagttgat  | tcaacaaagt  | atttttttct  | 2040 |
| tttttctcag  | tcctaatttg | gacaggtcaa  | agatgtgttc  | aggcattcca  | ggtaacaggt  | 2100 |
| gtgtatgtaa  | agttaaaaat | aggcttttta  | ggaactcact  | cttttagatat | ttacatccag  | 2160 |
| cttctcatgt  | taaatatttg | tccttaaagg  | gtttgagatg  | tacatctttc  | atttcgtatt  | 2220 |
| tctcataggc  | tatgccatgt | gcggaattca  | agttaccaat  | gtaacactgg  | ccagcgggcc  | 2280 |
| cagcaatctc  | catgtgtact | tattacagtc  | ttatttaacc  | aggggtccta  | accactaaca  | 2340 |
| ttgtgacttt  | gctttgagac | ctttcctctc  | ctgggtactg  | aggtgctatg  | aagccaactg  | 2400 |
| acaaagatgc  | atcacgtgtc | ttaggtctgat | gccactaccc  | gatttgttta  | tttgaattt   | 2460 |
| gagccattta  | aagaccaata | aacttccttt  | tttaaaaaaa  | aaaaaaaaaa  | aaaaaaaaaa  | 2520 |
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<210> 67  
 <211> 5059  
 <212> DNA  
 <213> Homo sapiens

<400> 67

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| gggaaacaag  | ctctcaggac  | ttccggtcgc  | catgatggct  | gtgggcggta  | aacgcggtta  | 120  |
| gtgcaagcat  | ctgggccatc  | ttcaatggta  | aaaaagatac  | agtaaagaca  | taaataccac  | 180  |
| atttgacaaa  | tggaaaaaaa  | ggagtgtcca  | gaaaagagta  | gcagcagtga  | ggaagagctg  | 240  |
| ccgagacggg  | tatacaggga  | gctaccctgt  | gtttctgaga  | ccctttgtga  | catctcacat  | 300  |
| tttttccaag  | aagatgatga  | gacagaggca  | gagccattat  | tgttccgtgc  | tgttccctgag | 360  |
| tgtcaactat  | ctggggggga  | cattcccagg  | agacatttgc  | tcagaagaga  | atcaaatagt  | 420  |
| ttcctcttat  | gcttctaaag  | tctgttttga  | gatcgaagaa  | gattataaaa  | atcgctcagtt | 480  |
| tctggggcct  | gaaggaaaatg | tggatgttga  | gttgattgat  | aagagcaca   | acagatacag  | 540  |
| cgtttggttc  | cccactgctg  | gctgggtatct | gtggtcagcc  | acaggcctcg  | gcttccctggt | 600  |
| aagggatgag  | gtcacagtga  | cgattgcgtt  | tggttccctgg | agtcagcacc  | tggccctgga  | 660  |
| cctgcagcac  | catgaacagt  | ggctgggtggg | cggccctctg  | tttgatgtca  | ctgcagagcc  | 720  |
| agaggaggct  | gtgcgcgaaa  | cccacttccc  | ccacttcac   | tcctccaag   | gtgaggtgga  | 780  |
| cgtctcctgg  | tttctcgttg  | cccattttta  | gaatgaagg   | atggctcctgg | agcatccagc  | 840  |
| ccgggtggag  | cctttctatg  | ctgtcctgga  | aagccccagc  | ttctctctga  | tgggcacctc  | 900  |
| gctgcggatc  | gccagtggga  | ctgcctctc   | catccccatc  | acttccaaca  | cattgatcta  | 960  |
| ttatcacccc  | caccccgaag  | atattaagtt  | ccacttgtac  | cttgtcccca  | gcgacgcctt  | 1020 |
| gctaacaaag  | gcatagatg   | atgaggaaga  | tcgcttccat  | gggtgtgcgcc | tgcagacttc  | 1080 |
| gcccccaatg  | gaaccctga   | actttgggtc  | cagttatatt  | gtgtctaatt  | ctgctaacct  | 1140 |
| gaaagtaatg  | cccaaggagt  | tgaattgtc   | ctacaggagc  | cctggagaaa  | ttcagcactt  | 1200 |
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| atcagccctt  | cctcctttct  | caggtgcagc  | ctttgtgaag  | gagaaccacc  | ggcaactcca  | 1380 |
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| tgagaatgag  | aaggagctgg  | tggagcagga  | aaagacacgg  | cagagcaaga  | atgaggcctt  | 1500 |
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| gtgtttatga  | aggatggggc  | ctggaaaggc  | aacttttctc  | gattaatgtg  | aaaaataatt  | 1980 |
| cctatggaca  | ctccgtttga  | agtatcacct  | tctcataact  | aaaagcagaa  | aagctaacaa  | 2040 |
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| gttaggactt  | taacacttta  | tctatggcta  | ctgttattag  | aacaatgtaa  | atgtatttgc  | 2160 |
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| ctgagatgaa  | atgtggtaaa  | tcaactccac  | agaaccacca  | aaaagaaaat  | gagggtaatt  | 2340 |
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| acatttggat  | tctaccatag  | actctgtcat  | ttttagacca  | tttcagctgt  | cttttgatta  | 2460 |
| atgttttctg  | ggcacacata  | tttccatcct  | tttatgttta  | atctgtttta  | aacaagttcc  | 2520 |
| tagtagacac  | catctggttg  | agtcagtttt  | ttttatgggtg | tattttgaac  | ccattctgat  | 2580 |
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| atztatcctc  | agtcagccag  | tttgttatgt  | cttttctatt  | ctactgttat  | cacatttgta  | 2700 |
| ccacttaaag  | tggaaatctag | gcactttatc  | accattttaga | tctattacc   | ttttctcatc  | 2760 |
| taggatatag  | ttatcttcta  | cataatcttt  | ctgtatctta  | aaacccatca  | ataaattatt  | 2820 |
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| taggtacaga  | ttctcttatt  | ttttgcttcc  | tctgaggaca  | tctttttctc  | accttcattc  | 3060 |
| tcagtgatgt  | tttttgcttg  | tagtattttt  | agttgacatt  | gttttctgtt  | cagcagtttc  | 3120 |
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| tatgtagtgt  | gtcatttttc  | tgtcagattt  | caaggatatt  | atcttttagt  | tttagccatt  | 3240 |
| tcattatggt  | ggggatgagt  | ttccttgttt  | tattcccttt  | ggaatttgct  | ccaattcata  | 3300 |

|             |            |             |            |             |             |      |
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| ctttttatta  | gcctgatttt | catctttata  | ggaaatagtt | taagtgatga  | caagttccaa  | 3420 |
| tagcttatat  | gcccagaagg | ccttcaaaat  | aagaattttg | aaagaataca  | gaaaacaaac  | 3480 |
| ttttatatcc  | ttctcatgtc | ttctactgta  | aaattcatat | gctttgctac  | tctaaaccta  | 3540 |
| gtttgaaatc  | aacagtcttg | agaatagatg  | aaaattttga | tgaatagtg   | aattctttta  | 3600 |
| aatggaaacc  | tcttacatgt | gattttccct  | gccatctaga | aataaaccat  | agtatttatg  | 3660 |
| ttgaatcaat  | caatattata | ttttgttttt  | ttctctctct | tctgagactc  | ttattgtgga  | 3720 |
| aatggttagac | ttttatgttt | tcctaaatgt  | ccctgatatt | ctacttattt  | agaacatctt  | 3780 |
| ttcatttttt  | ccattattct | gattgggtaa  | ttttaatttg | tctattttca  | aatttgctgg  | 3840 |
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<210> 68  
 <211> 2279  
 <212> DNA  
 <213> Homo sapiens

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| tctgccactc | agccgcggcc  | ccgtgccagc  | caaaccaccc  | gtgctcttcg | agaagatggg | 180  |
| cgtgggcccg | ctggacatgt  | atgtgctgca  | cccgcctctc  | gccggcgccg | agcgcacgct | 240  |
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| ggcttcccc  | cacgatgtgg  | acctgtgcct  | ggtgtcacc   | tgtgaatttg | agcatcgcaa | 1260 |
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ggacctggcc tacctgcccc gcgggagcag cgcccacctg gtggatgagg agttcttcca 1920
gcgcgtgcgc gcgctctgct acgtcatcag tggccaggac cagcgcaagg aggaaggcat 1980
gcgggcccgtc ctggacgcgc tactggccag caagcagcat tgggaccgtg acctgcaggt 2040
gacctgatc cccactttcg actcgggtggc catgcatacg tggtagcgag agacgcacgc 2100
ccggcaccag gcgctgggca tcacgggtgtt gggcagcaac ggcatggtgt ccatgcagga 2160
tgacgccttc ccggcctgca aggtggagtt ctagcccat cgccgacacg ccccccactc 2220
agcccagccc gcctgtccct agattcagcc acatcagaaa taaactgtga ctacacttg 2279

```

```

<210> 69
<211> 229
<212> PRT
<213> Homo sapiens

```

```

<400> 69
Met Gly Asp Lys Ile Trp Leu Pro Phe Pro Val Leu Leu Leu Ala Ala
1 5 10 15
Leu Pro Pro Val Leu Leu Pro Gly Ala Ala Gly Phe Thr Pro Ser Leu
20 25 30
Asp Ser Asp Phe Thr Phe Thr Leu Pro Ala Gly Gln Lys Glu Cys Phe
35 40 45
Tyr Gln Pro Met Pro Leu Lys Ala Ser Leu Glu Ile Glu Tyr Gln Val
50 55 60
Leu Asp Gly Ala Gly Leu Asp Ile Asp Phe His Leu Ala Ser Pro Glu
65 70 75 80
Gly Lys Thr Leu Val Phe Glu Gln Arg Lys Ser Asp Gly Val His Thr
85 90 95
Val Glu Thr Glu Val Gly Asp Tyr Met Phe Cys Phe Asp Asn Thr Phe
100 105 110
Ser Thr Ile Ser Glu Lys Val Ile Phe Phe Glu Leu Ile Leu Asp Asn
115 120 125
Met Gly Glu Gln Ala Gln Glu Gln Glu Asp Trp Lys Lys Tyr Ile Thr
130 135 140
Gly Thr Asp Ile Leu Asp Met Lys Leu Glu Asp Ile Leu Glu Ser Ile
145 150 155 160
Asn Ser Ile Lys Ser Arg Leu Ser Lys Ser Gly His Ile Gln Thr Leu
165 170 175
Leu Arg Ala Phe Glu Ala Arg Asp Arg Asn Ile Gln Glu Ser Asn Phe
180 185 190
Asp Arg Val Asn Phe Trp Ser Met Val Asn Leu Val Val Met Val Val
195 200 205
Val Ser Ala Ile Gln Val Tyr Met Leu Lys Ser Leu Phe Glu Asp Lys
210 215 220
Arg Lys Ser Arg Thr
225

```

```

<210> 70
<211> 381
<212> PRT
<213> Homo sapiens

```

```

<400> 70
Met Gly Pro Thr Ser Val Pro Leu Val Lys Ala His Arg Ser Ser Val
1 5 10 15

```

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Asp | Tyr | Val | Asn | Tyr | Asp | Ile | Ile | Val | Arg | His | Tyr | Asn | Tyr | Thr |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Gly | Lys | Leu | Asn | Ile | Ser | Ala | Asp | Lys | Glu | Asn | Ser | Ile | Lys | Leu | Thr |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Ser | Val | Val | Phe | Ile | Leu | Ile | Cys | Cys | Phe | Ile | Ile | Leu | Glu | Asn | Ile |
|     |     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Phe | Val | Leu | Leu | Thr | Ile | Trp | Lys | Thr | Lys | Lys | Phe | His | Arg | Pro | Met |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Tyr | Tyr | Phe | Ile | Gly | Asn | Leu | Ala | Leu | Ser | Asp | Leu | Leu | Ala | Gly | Val |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Ala | Tyr | Thr | Ala | Asn | Leu | Leu | Leu | Ser | Gly | Ala | Thr | Thr | Tyr | Lys | Leu |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Thr | Pro | Ala | Gln | Trp | Phe | Leu | Arg | Glu | Gly | Ser | Met | Phe | Val | Ala | Leu |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Ser | Ala | Ser | Val | Phe | Ser | Leu | Leu | Ala | Ile | Ala | Ile | Glu | Arg | Tyr | Ile |
|     |     | 130 |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Thr | Met | Leu | Lys | Met | Lys | Leu | His | Asn | Gly | Ser | Asn | Asn | Phe | Arg | Leu |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
| Phe | Leu | Leu | Ile | Ser | Ala | Cys | Trp | Val | Ile | Ser | Leu | Ile | Leu | Gly | Gly |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Leu | Pro | Ile | Met | Gly | Trp | Asn | Cys | Ile | Ser | Ala | Leu | Ser | Ser | Cys | Ser |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Thr | Val | Leu | Pro | Leu | Tyr | His | Lys | His | Tyr | Ile | Leu | Phe | Cys | Thr | Thr |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Val | Phe | Thr | Leu | Leu | Leu | Leu | Ser | Ile | Val | Ile | Leu | Tyr | Cys | Arg | Ile |
|     |     | 210 |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Tyr | Ser | Leu | Val | Arg | Thr | Arg | Ser | Arg | Arg | Leu | Thr | Phe | Arg | Lys | Asn |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Ile | Ser | Lys | Ala | Ser | Arg | Ser | Ser | Glu | Asn | Val | Ala | Leu | Leu | Lys | Thr |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Val | Ile | Ile | Val | Leu | Ser | Val | Phe | Ile | Ala | Cys | Trp | Ala | Pro | Leu | Phe |
|     |     |     | 260 |     |     |     | 265 |     |     |     |     |     | 270 |     |     |
| Ile | Leu | Leu | Leu | Leu | Asp | Val | Gly | Cys | Lys | Val | Lys | Thr | Cys | Asp | Ile |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Leu | Phe | Arg | Ala | Glu | Tyr | Phe | Leu | Val | Leu | Ala | Val | Leu | Asn | Ser | Gly |
|     |     | 290 |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Thr | Asn | Pro | Ile | Ile | Tyr | Thr | Leu | Thr | Asn | Lys | Glu | Met | Arg | Arg | Ala |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |
| Phe | Ile | Arg | Ile | Met | Ser | Cys | Cys | Lys | Cys | Pro | Ser | Gly | Asp | Ser | Ala |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Gly | Lys | Phe | Lys | Arg | Pro | Ile | Ile | Ala | Gly | Met | Glu | Phe | Ser | Arg | Ser |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Lys | Ser | Asp | Asn | Ser | Ser | His | Pro | Gln | Lys | Asp | Glu | Gly | Asp | Asn | Pro |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Glu | Thr | Ile | Met | Ser | Ser | Gly | Asn | Val | Asn | Ser | Ser | Ser |     |     |     |
|     |     | 370 |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |

<210> 71  
 <211> 679  
 <212> PRT  
 <213> Homo sapiens

<400> 71  
 Met Ala Thr Leu Ile Thr Ser Thr Thr Ala Ala Thr Ala Ala Ser Gly  
 1 5 10 15  
 Pro Leu Val Asp Tyr Leu Trp Met Leu Ile Leu Gly Phe Ile Ile Ala  
 20 25 30  
 Phe Val Leu Ala Phe Ser Val Gly Ala Asn Asp Val Ala Asn Ser Phe  
 35 40 45  
 Gly Thr Ala Val Gly Ser Gly Val Val Thr Leu Lys Gln Ala Cys Ile  
 50 55 60



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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ala | Ser | Ile | Phe | Glu | Thr | Val | Gly | Ser | Val | Leu | Leu | Gly | Ala | Lys |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |
| Val | Ser | Glu | Thr | Ile | Arg | Lys | Gly | Leu | Ile | Asp | Val | Glu | Met | Tyr | Asn |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Ser | Thr | Gln | Gly | Leu | Leu | Met | Ala | Gly | Ser | Val | Ser | Ala | Met | Phe | Gly |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Ser | Ala | Val | Trp | Gln | Leu | Val | Ala | Ser | Phe | Leu | Lys | Leu | Pro | Ile | Ser |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Gly | Thr | His | Cys | Ile | Val | Gly | Ala | Thr | Ile | Gly | Phe | Ser | Leu | Val | Ala |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Lys | Gly | Gln | Glu | Gly | Val | Lys | Trp | Ser | Glu | Leu | Ile | Lys | Ile | Val | Met |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
| Ser | Trp | Phe | Val | Ser | Pro | Leu | Leu | Ser | Gly | Ile | Met | Ser | Gly | Ile | Leu |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Phe | Phe | Leu | Val | Arg | Ala | Phe | Ile | Leu | His | Lys | Ala | Asp | Pro | Val | Pro |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Asn | Gly | Leu | Arg | Ala | Leu | Pro | Val | Phe | Tyr | Ala | Cys | Thr | Val | Gly | Ile |
|     | 195 |     |     |     |     |     | 200 |     |     |     |     |     | 205 |     |     |
| Asn | Leu | Phe | Ser | Ile | Met | Tyr | Thr | Gly | Ala | Pro | Leu | Leu | Gly | Phe | Asp |
|     | 210 |     |     |     |     | 215 |     |     |     |     |     | 220 |     |     |     |
| Lys | Leu | Pro | Leu | Trp | Gly | Thr | Ile | Leu | Ile | Ser | Val | Gly | Cys | Ala | Val |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Phe | Cys | Ala | Leu | Ile | Val | Trp | Phe | Phe | Val | Cys | Pro | Arg | Met | Lys | Arg |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Lys | Ile | Glu | Arg | Glu | Ile | Lys | Cys | Ser | Pro | Ser | Glu | Ser | Pro | Leu | Met |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Glu | Lys | Lys | Asn | Ser | Leu | Lys | Glu | Asp | His | Glu | Glu | Thr | Lys | Leu | Ser |
|     |     |     | 275 |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Val | Gly | Asp | Ile | Glu | Asn | Lys | His | Pro | Val | Ser | Glu | Val | Gly | Pro | Ala |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Thr | Val | Pro | Leu | Gln | Ala | Val | Val | Glu | Glu | Arg | Thr | Val | Ser | Phe | Lys |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |
| Leu | Gly | Asp | Leu | Glu | Ala | Pro | Glu | Arg | Glu | Arg | Leu | Pro | Ser | Val |     |
|     |     |     |     | 325 |     |     |     | 330 |     |     |     |     |     | 335 |     |
| Asp | Leu | Lys | Glu | Thr | Ser | Ile | Asp | Ser | Thr | Val | Asn | Gly | Ala | Val |     |
|     |     |     | 340 |     |     |     | 345 |     |     |     |     | 350 |     |     |     |
| Gln | Leu | Pro | Asn | Gly | Asn | Leu | Val | Gln | Phe | Ser | Gln | Ala | Val | Ser | Asn |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Gln | Ile | Asn | Ser | Ser | Gly | His | Ser | Gln | Tyr | His | Thr | Val | His | Lys | Asp |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Ser | Gly | Leu | Tyr | Lys | Glu | Leu | Leu | His | Lys | Leu | His | Leu | Ala | Lys | Val |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Gly | Asp | Cys | Met | Gly | Asp | Ser | Gly | Asp | Lys | Pro | Leu | Arg | Arg | Asn | Asn |
|     |     |     |     | 405 |     |     |     | 410 |     |     |     |     |     | 415 |     |
| Ser | Tyr | Thr | Ser | Tyr | Thr | Met | Ala | Ile | Cys | Gly | Met | Pro | Leu | Asp | Ser |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Phe | Arg | Ala | Lys | Glu | Gly | Glu | Gln | Lys | Gly | Glu | Glu | Met | Glu | Lys | Leu |
|     |     |     | 435 |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Thr | Trp | Pro | Asn | Ala | Asp | Ser | Lys | Lys | Arg | Ile | Arg | Met | Asp | Ser | Tyr |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |
| Thr | Ser | Tyr | Cys | Asn | Ala | Val | Ser | Asp | Leu | His | Ser | Ala | Ser | Glu | Ile |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |
| Asp | Met | Ser | Val | Lys | Ala | Ala | Met | Gly | Leu | Gly | Asp | Arg | Lys | Gly | Ser |
|     |     |     |     | 485 |     |     |     | 490 |     |     |     |     |     | 495 |     |
| Asn | Gly | Ser | Leu | Glu | Glu | Trp | Tyr | Asp | Gln | Asp | Lys | Pro | Glu | Val | Ser |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |
| Leu | Leu | Phe | Gln | Phe | Leu | Gln | Ile | Leu | Thr | Ala | Cys | Phe | Gly | Ser | Phe |
|     |     |     | 515 |     |     |     | 520 |     |     |     |     | 525 |     |     |     |
| Ala | His | Gly | Gly | Asn | Asp | Val | Ser | Asn | Ala | Ile | Gly | Pro | Leu | Val | Ala |
|     |     |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |

Leu Tyr Leu Val Tyr Asp Thr Gly Asp Val Ser Ser Lys Val Ala Thr  
 545 550 555 560  
 Pro Ile Trp Leu Leu Leu Tyr Gly Gly Val Gly Ile Cys Val Gly Leu  
 565 570 575  
 Trp Val Trp Gly Arg Arg Val Ile Gln Thr Met Gly Lys Asp Leu Thr  
 580 585 590  
 Pro Ile Thr Pro Ser Ser Gly Phe Ser Ile Glu Leu Ala Ser Ala Leu  
 595 600 605  
 Thr Val Val Ile Ala Ser Asn Ile Gly Leu Pro Ile Ser Thr Thr His  
 610 615 620  
 Cys Lys Val Gly Ser Val Val Ser Val Gly Trp Leu Arg Ser Lys Lys  
 625 630 635 640  
 Ala Val Asp Trp Arg Leu Phe Arg Asn Ile Phe Met Ala Trp Phe Val  
 645 650 655  
 Thr Val Pro Ile Ser Gly Val Ile Ser Ala Ala Ile Met Ala Ile Phe  
 660 665 670  
 Arg Tyr Val Ile Leu Arg Met  
 675

<210> 72  
 <211> 476  
 <212> PRT  
 <213> Homo sapiens

<400> 72  
 Met Met His Leu Ala Phe Leu Val Leu Leu Cys Leu Pro Val Cys Ser  
 1 5 10 15  
 Ala Tyr Pro Leu Ser Gly Ala Ala Lys Glu Glu Asp Ser Asn Lys Asp  
 20 25 30  
 Leu Ala Gln Gln Tyr Leu Glu Lys Tyr Tyr Asn Leu Glu Lys Asp Val  
 35 40 45  
 Lys Gln Phe Arg Arg Lys Asp Ser Asn Leu Ile Val Lys Lys Ile Gln  
 50 55 60  
 Gly Met Gln Lys Phe Leu Gly Leu Glu Val Thr Gly Lys Leu Asp Thr  
 65 70 75 80  
 Asp Thr Leu Glu Val Met Arg Lys Pro Arg Cys Gly Val Pro Asp Val  
 85 90 95  
 Gly His Phe Ser Ser Phe Pro Gly Met Pro Lys Trp Arg Lys Thr His  
 100 105 110  
 Leu Thr Tyr Arg Ile Val Asn Tyr Thr Pro Asp Leu Pro Arg Asp Ala  
 115 120 125  
 Val Asp Ser Ala Ile Glu Lys Ala Leu Lys Val Trp Glu Glu Val Thr  
 130 135 140  
 Pro Leu Thr Phe Ser Arg Leu Tyr Glu Gly Glu Ala Asp Ile Met Ile  
 145 150 155 160  
 Ser Phe Ala Val Lys Glu His Gly Asp Phe Tyr Ser Phe Asp Gly Pro  
 165 170 175  
 Gly His Ser Leu Ala His Ala Tyr Pro Pro Gly Pro Gly Leu Tyr Gly  
 180 185 190  
 Asp Ile His Phe Asp Asp Asp Glu Lys Trp Thr Glu Asp Ala Ser Gly  
 195 200 205  
 Thr Asn Leu Phe Leu Val Ala Ala His Glu Leu Gly His Ser Leu Gly  
 210 215 220  
 Leu Phe His Ser Ala Asn Thr Glu Ala Leu Met Tyr Pro Leu Tyr Asn  
 225 230 235 240  
 Ser Phe Thr Glu Leu Ala Gln Phe Arg Leu Ser Gln Asp Asp Val Asn  
 245 250 255  
 Gly Ile Gln Ser Leu Tyr Gly Pro Pro Pro Ala Ser Thr Glu Glu Pro  
 260 265 270  
 Leu Val Pro Thr Lys Ser Val Pro Ser Gly Ser Glu Met Pro Ala Lys  
 275 280 285

Cys Asp Pro Ala Leu Ser Phe Asp Ala Ile Ser Thr Leu Arg Gly Glu  
 290 295 300  
 Tyr Leu Phe Phe Lys Asp Arg Tyr Phe Trp Arg Arg Ser His Trp Asn  
 305 310 315 320  
 Pro Glu Pro Glu Phe His Leu Ile Ser Ala Phe Trp Pro Ser Leu Pro  
 325 330 335  
 Ser Tyr Leu Asp Ala Ala Tyr Glu Val Asn Ser Arg Asp Thr Val Phe  
 340 345 350  
 Ile Phe Lys Gly Asn Glu Phe Trp Ala Ile Arg Gly Asn Glu Val Gln  
 355 360 365  
 Ala Gly Tyr Pro Arg Gly Ile His Thr Leu Gly Phe Pro Pro Thr Ile  
 370 375 380  
 Arg Lys Ile Asp Ala Ala Val Ser Asp Lys Glu Lys Lys Lys Thr Tyr  
 385 390 395 400  
 Phe Phe Ala Ala Asp Lys Tyr Trp Arg Phe Asp Glu Asn Ser Gln Ser  
 405 410 415  
 Met Glu Gln Gly Phe Pro Arg Leu Ile Ala Asp Asp Phe Pro Gly Val  
 420 425 430  
 Glu Pro Lys Val Asp Ala Val Leu Gln Ala Phe Gly Phe Phe Tyr Phe  
 435 440 445  
 Phe Ser Gly Ser Ser Gln Phe Glu Phe Asp Pro Asn Ala Arg Met Val  
 450 455 460  
 Thr His Ile Leu Lys Ser Asn Ser Trp Leu His Cys  
 465 470 475

<210> 73  
 <211> 528  
 <212> PRT  
 <213> Homo sapiens

<400> 73  
 Met Arg Cys Ala Leu Ala Leu Ser Ala Leu Leu Leu Leu Leu Ser Thr  
 1 5 10 15  
 Pro Pro Leu Leu Pro Ser Ser Pro Ser Pro Ser Pro Ser Pro Ser Pro  
 20 25 30  
 Ser Gln Asn Ala Thr Gln Thr Thr Thr Asp Ser Ser Asn Lys Thr Ala  
 35 40 45  
 Pro Thr Pro Ala Ser Ser Val Thr Ile Met Ala Thr Asp Thr Ala Gln  
 50 55 60  
 Gln Ser Thr Val Pro Thr Ser Lys Ala Asn Glu Ile Leu Ala Ser Val  
 65 70 75 80  
 Lys Ala Thr Thr Leu Gly Val Ser Ser Asp Ser Pro Gly Thr Thr Thr  
 85 90 95  
 Leu Ala Gln Gln Val Ser Gly Pro Val Asn Thr Thr Val Ala Arg Gly  
 100 105 110  
 Gly Gly Ser Gly Asn Pro Thr Thr Thr Ile Glu Ser Pro Lys Ser Thr  
 115 120 125  
 Lys Ser Ala Asp Thr Thr Thr Val Ala Thr Ser Thr Ala Thr Ala Lys  
 130 135 140  
 Pro Asn Thr Thr Ser Ser Gln Asn Gly Ala Glu Asp Thr Thr Asn Ser  
 145 150 155 160  
 Gly Gly Lys Ser Ser His Ser Val Thr Thr Asp Leu Thr Ser Thr Lys  
 165 170 175  
 Ala Glu His Leu Thr Thr Pro His Pro Thr Ser Pro Leu Ser Pro Arg  
 180 185 190  
 Gln Pro Thr Leu Thr His Pro Val Ala Thr Pro Thr Ser Ser Gly His  
 195 200 205  
 Asp His Leu Met Lys Ile Ser Ser Ser Ser Ser Thr Val Ala Ile Pro  
 210 215 220  
 Gly Tyr Thr Phe Thr Ser Pro Gly Met Thr Thr Thr Leu Pro Ser Ser  
 225 230 235 240

Val Ile Ser Gln Arg Thr Gln Gln Thr Ser Ser Gln Met Pro Ala Ser  
 245 250 255  
 Ser Thr Ala Pro Ser Ser Gln Glu Thr Val Gln Pro Thr Ser Pro Ala  
 260 265 270  
 Thr Ala Leu Arg Thr Pro Thr Leu Pro Glu Thr Met Ser Ser Pro  
 275 280 285  
 Thr Ala Ala Ser Thr Thr His Arg Tyr Pro Lys Thr Pro Ser Pro Thr  
 290 295 300  
 Val Ala His Glu Ser Asn Trp Ala Lys Cys Glu Asp Leu Glu Thr Gln  
 305 310 315 320  
 Thr Gln Ser Glu Lys Gln Leu Val Leu Asn Leu Thr Gly Asn Thr Leu  
 325 330 335  
 Cys Ala Gly Gly Ala Ser Asp Glu Lys Leu Ile Ser Leu Ile Cys Arg  
 340 345 350  
 Ala Val Lys Ala Thr Phe Asn Pro Ala Gln Asp Lys Cys Gly Ile Arg  
 355 360 365  
 Leu Ala Ser Val Pro Gly Ser Gln Thr Val Val Val Lys Glu Ile Thr  
 370 375 380  
 Ile His Thr Lys Leu Pro Ala Lys Asp Val Tyr Glu Arg Leu Lys Asp  
 385 390 395 400  
 Lys Trp Asp Glu Leu Lys Glu Ala Gly Val Ser Asp Met Lys Leu Gly  
 405 410 415  
 Asp Gln Gly Pro Pro Glu Glu Ala Glu Asp Arg Phe Ser Met Pro Leu  
 420 425 430  
 Ile Ile Thr Ile Val Cys Met Ala Ser Phe Leu Leu Leu Val Ala Ala  
 435 440 445  
 Leu Tyr Gly Cys Cys His Gln Arg Leu Ser Gln Arg Lys Asp Gln Gln  
 450 455 460  
 Arg Leu Thr Glu Glu Leu Gln Thr Val Glu Asn Gly Tyr His Asp Asn  
 465 470 475 480  
 Pro Thr Leu Glu Val Met Glu Thr Ser Ser Glu Met Gln Glu Lys Lys  
 485 490 495  
 Val Val Ser Leu Asn Gly Glu Leu Gly Asp Ser Trp Ile Val Pro Leu  
 500 505 510  
 Asp Asn Leu Thr Lys Asp Asp Leu Asp Glu Glu Glu Asp Thr His Leu  
 515 520 525

<210> 74  
 <211> 493  
 <212> PRT  
 <213> Homo sapiens

<400> 74  
 Met Leu Lys Ala Leu Phe Leu Thr Met Leu Thr Leu Ala Leu Val Lys  
 1 5 10 15  
 Ser Gln Asp Thr Glu Glu Thr Ile Thr Tyr Thr Gln Cys Thr Asp Gly  
 20 25 30  
 Tyr Glu Trp Asp Pro Val Arg Gln Gln Cys Lys Asp Ile Asp Glu Cys  
 35 40 45  
 Asp Ile Val Pro Asp Ala Cys Lys Gly Gly Met Lys Cys Val Asn His  
 50 55 60  
 Tyr Gly Gly Tyr Leu Cys Leu Pro Lys Thr Ala Gln Ile Ile Val Asn  
 65 70 75 80  
 Asn Glu Gln Pro Gln Gln Glu Thr Gln Pro Ala Glu Gly Thr Ser Gly  
 85 90 95  
 Ala Thr Thr Gly Val Val Ala Ala Ser Ser Met Ala Thr Ser Gly Val  
 100 105 110  
 Leu Pro Gly Gly Gly Phe Val Ala Ser Ala Ala Val Ala Gly Pro  
 115 120 125  
 Glu Met Gln Thr Gly Arg Asn Asn Phe Val Ile Arg Arg Asn Pro Ala  
 130 135 140

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Asp | Pro | Gln | Arg | Ile | Pro | Ser | Asn | Pro | Ser | His | Arg | Ile | Gln | Cys | Ala |  |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |  |
| Ala | Gly | Tyr | Glu | Gln | Ser | Glu | His | Asn | Val | Cys | Gln | Asp | Ile | Asp | Glu |  |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |  |
| Cys | Thr | Ala | Gly | Thr | His | Asn | Cys | Arg | Ala | Asp | Gln | Val | Cys | Ile | Asn |  |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     |     | 190 |     |  |
| Leu | Arg | Gly | Ser | Phe | Ala | Cys | Gln | Cys | Pro | Pro | Gly | Tyr | Gln | Lys | Arg |  |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |  |
| Gly | Glu | Gln | Cys | Val | Asp | Ile | Asp | Glu | Cys | Thr | Ile | Pro | Pro | Tyr | Cys |  |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |  |
| His | Gln | Arg | Cys | Val | Asn | Thr | Pro | Gly | Ser | Phe | Tyr | Cys | Gln | Cys | Ser |  |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Pro | Gly | Phe | Gln | Leu | Ala | Ala | Asn | Asn | Tyr | Thr | Cys | Val | Asp | Ile | Asn |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |  |
| Glu | Cys | Asp | Ala | Ser | Asn | Gln | Cys | Ala | Gln | Gln | Cys | Tyr | Asn | Ile | Leu |  |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |  |
| Gly | Ser | Phe | Ile | Cys | Gln | Cys | Asn | Gln | Gly | Tyr | Glu | Leu | Ser | Ser | Asp |  |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |  |
| Arg | Leu | Asn | Cys | Glu | Asp | Ile | Asp | Glu | Cys | Arg | Thr | Ser | Ser | Tyr | Leu |  |
|     | 290 |     |     |     | 295 |     |     |     |     |     | 300 |     |     |     |     |  |
| Cys | Gln | Tyr | Gln | Cys | Val | Asn | Glu | Pro | Gly | Lys | Phe | Ser | Cys | Met | Cys |  |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |  |
| Pro | Gln | Gly | Tyr | Gln | Val | Val | Arg | Ser | Arg | Thr | Cys | Gln | Asp | Ile | Asn |  |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |  |
| Glu | Cys | Glu | Thr | Thr | Asn | Glu | Cys | Arg | Glu | Asp | Glu | Met | Cys | Trp | Asn |  |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |  |
| Tyr | His | Gly | Gly | Phe | Arg | Cys | Tyr | Pro | Arg | Asn | Pro | Cys | Gln | Asp | Pro |  |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |  |
| Tyr | Ile | Leu | Thr | Pro | Glu | Asn | Arg | Cys | Val | Cys | Pro | Val | Ser | Asn | Ala |  |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |  |
| Met | Cys | Arg | Glu | Leu | Pro | Gln | Ser | Ile | Val | Tyr | Lys | Tyr | Met | Ser | Ile |  |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |  |
| Arg | Ser | Asp | Arg | Ser | Val | Pro | Ser | Asp | Ile | Phe | Gln | Ile | Gln | Ala | Thr |  |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |  |
| Thr | Ile | Tyr | Ala | Asn | Thr | Ile | Asn | Thr | Phe | Arg | Ile | Lys | Ser | Gly | Asn |  |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |  |
| Glu | Asn | Gly | Glu | Phe | Tyr | Leu | Arg | Gln | Thr | Ser | Pro | Val | Ser | Ala | Met |  |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |  |
| Leu | Val | Leu | Val | Lys | Ser | Leu | Ser | Gly | Pro | Arg | Glu | His | Ile | Val | Asp |  |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |  |
| Leu | Glu | Met | Leu | Thr | Val | Ser | Ser | Ile | Gly | Thr | Phe | Arg | Thr | Ser | Ser |  |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |  |
| Val | Leu | Arg | Leu | Thr | Ile | Ile | Val | Gly | Pro | Phe | Ser | Phe |     |     |     |  |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     |     |     |  |

<210> 75  
 <211> 646  
 <212> PRT  
 <213> Homo sapiens

<400> 75

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Gly | Leu | Pro | Arg | Leu | Val | Cys | Ala | Phe | Leu | Leu | Ala | Ala | Cys | Cys |  |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |  |
| Cys | Cys | Pro | Arg | Val | Ala | Gly | Val | Pro | Gly | Glu | Ala | Glu | Gln | Pro | Ala |  |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |  |
| Pro | Glu | Leu | Val | Glu | Val | Glu | Val | Gly | Ser | Thr | Ala | Leu | Leu | Lys | Cys |  |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |  |
| Gly | Leu | Ser | Gln | Ser | Gln | Gly | Asn | Leu | Ser | His | Val | Asp | Trp | Phe | Ser |  |
|     | 50  |     |     |     |     | 55  |     |     |     | 60  |     |     |     |     |     |  |
| Val | His | Lys | Glu | Lys | Arg | Thr | Leu | Ile | Phe | Arg | Val | Arg | Gln | Gly | Gln |  |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Gly | Gln | Ser | Glu | Pro | Gly | Glu | Tyr | Glu | Gln | Arg | Leu | Ser | Leu | Gln | Asp |  |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |  |
| Arg | Gly | Ala | Thr | Leu | Ala | Leu | Thr | Gln | Val | Thr | Pro | Gln | Asp | Glu | Arg |  |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |  |
| Ile | Phe | Leu | Cys | Gln | Gly | Lys | Arg | Pro | Arg | Ser | Gln | Glu | Tyr | Arg | Ile |  |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |  |
| Gln | Leu | Arg | Val | Tyr | Lys | Ala | Pro | Glu | Glu | Pro | Asn | Ile | Gln | Val | Asn |  |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |  |
| Pro | Leu | Gly | Ile | Pro | Val | Asn | Ser | Lys | Glu | Pro | Glu | Glu | Val | Ala | Thr |  |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |  |
| Cys | Val | Gly | Arg | Asn | Gly | Tyr | Pro | Ile | Pro | Gln | Val | Ile | Trp | Tyr | Lys |  |
|     |     |     | 165 |     |     |     |     |     | 170 |     |     |     |     | 175 |     |  |
| Asn | Gly | Arg | Pro | Leu | Lys | Glu | Glu | Lys | Asn | Arg | Val | His | Ile | Gln | Ser |  |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |  |
| Ser | Gln | Thr | Val | Glu | Ser | Ser | Gly | Leu | Tyr | Thr | Leu | Gln | Ser | Ile | Leu |  |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |  |
| Lys | Ala | Gln | Leu | Val | Lys | Glu | Asp | Lys | Asp | Ala | Gln | Phe | Tyr | Cys | Glu |  |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |  |
| Leu | Asn | Tyr | Arg | Leu | Pro | Ser | Gly | Asn | His | Met | Lys | Glu | Ser | Arg | Glu |  |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Val | Thr | Val | Pro | Val | Phe | Tyr | Pro | Thr | Glu | Lys | Val | Trp | Leu | Glu | Val |  |
|     |     |     | 245 |     |     |     |     |     | 250 |     |     |     |     | 255 |     |  |
| Glu | Pro | Val | Gly | Met | Leu | Lys | Glu | Gly | Asp | Arg | Val | Glu | Ile | Arg | Cys |  |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |  |
| Leu | Ala | Asp | Gly | Asn | Pro | Pro | Pro | His | Phe | Ser | Ile | Ser | Lys | Gln | Asn |  |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |  |
| Pro | Ser | Thr | Arg | Glu | Ala | Glu | Glu | Glu | Thr | Thr | Asn | Asp | Asn | Gly | Val |  |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |  |
| Leu | Val | Leu | Glu | Pro | Ala | Arg | Lys | Glu | His | Ser | Gly | Arg | Tyr | Glu | Cys |  |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |  |
| Gln | Ala | Trp | Asn | Leu | Asp | Thr | Met | Ile | Ser | Leu | Leu | Ser | Glu | Pro | Gln |  |
|     |     |     | 325 |     |     |     |     |     | 330 |     |     |     |     | 335 |     |  |
| Glu | Leu | Leu | Val | Asn | Tyr | Val | Ser | Asp | Val | Arg | Val | Ser | Pro | Ala | Ala |  |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |  |
| Pro | Glu | Arg | Gln | Glu | Gly | Ser | Ser | Leu | Thr | Leu | Thr | Cys | Glu | Ala | Glu |  |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |  |
| Ser | Ser | Gln | Asp | Leu | Glu | Phe | Gln | Trp | Leu | Arg | Glu | Glu | Thr | Asp | Gln |  |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |  |
| Val | Leu | Glu | Arg | Gly | Pro | Val | Leu | Gln | Leu | His | Asp | Leu | Lys | Arg | Glu |  |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |  |
| Ala | Gly | Gly | Gly | Tyr | Arg | Cys | Val | Ala | Ser | Val | Pro | Ser | Ile | Pro | Gly |  |
|     |     |     | 405 |     |     |     |     |     | 410 |     |     |     |     | 415 |     |  |
| Leu | Asn | Arg | Thr | Gln | Leu | Val | Lys | Leu | Ala | Ile | Phe | Gly | Pro | Pro | Trp |  |
|     |     | 420 |     |     |     |     |     | 425 |     |     |     |     | 430 |     |     |  |
| Met | Ala | Phe | Lys | Glu | Arg | Lys | Val | Trp | Val | Lys | Glu | Asn | Met | Val | Leu |  |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |  |
| Asn | Leu | Ser | Cys | Glu | Ala | Ser | Gly | His | Pro | Arg | Pro | Thr | Ile | Ser | Trp |  |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |  |
| Asn | Val | Asn | Gly | Thr | Ala | Ser | Glu | Gln | Asp | Gln | Asp | Pro | Gln | Arg | Val |  |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |  |
| Leu | Ser | Thr | Leu | Asn | Val | Leu | Val | Thr | Pro | Glu | Leu | Leu | Glu | Thr | Gly |  |
|     |     |     | 485 |     |     |     |     |     | 490 |     |     |     |     | 495 |     |  |
| Val | Glu | Cys | Thr | Ala | Ser | Asn | Asp | Leu | Gly | Lys | Asn | Thr | Ser | Ile | Leu |  |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |  |
| Phe | Leu | Glu | Leu | Val | Asn | Leu | Thr | Leu | Thr | Pro | Asp | Ser | Asn | Thr |     |  |
|     | 515 |     |     |     |     |     | 520 |     |     |     | 525 |     |     |     |     |  |
| Thr | Thr | Gly | Leu | Ser | Thr | Ser | Thr | Ala | Ser | Pro | His | Thr | Arg | Ala | Asn |  |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |  |
| Ser | Thr | Ser | Thr | Glu | Arg | Lys | Leu | Pro | Glu | Pro | Glu | Ser | Arg | Gly | Val |  |
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |  |



[illegible]

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<210> 76
<211> 469
<212> PRT
<213> Homo sapiens
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|         |          |         |         |         |         |         |         |         |         |         |        |        |        |        |         |
|---------|----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|--------|--------|--------|---------|
|         | <400> 76 |         |         |         |         |         |         |         |         |         |        |        |        |        |         |
| Met 1   | His      | Ser     | Phe     | Pro 5   | Pro     | Leu     | Leu     | Leu     | Leu 10  | Leu     | Phe    | Trp    | Gly    | Val 15 | Val     |
| Ser     | His      | Ser     | Phe 20  | Pro     | Ala     | Thr     | Leu     | Glu 25  | Thr     | Gln     | Glu    | Gln    | Asp 30 | Val    | Asp     |
| Leu     | Val      | Gln 35  | Lys     | Tyr     | Leu     | Glu     | Lys 40  | Tyr     | Tyr     | Asn     | Leu    | Lys 45 | Asn    | Asp    | Gly     |
| Arg     | Gln 50   | Val     | Glu     | Lys     | Arg 55  | Arg     | Asn     | Ser     | Gly     | Pro     | Val 60 | Val    | Glu    | Lys    | Leu     |
| Lys 65  | Gln      | Met     | Gln     | Glu     | Phe 70  | Phe     | Gly     | Leu     | Lys     | Val 75  | Thr    | Gly    | Lys    | Pro    | Asp 80  |
| Ala     | Glu      | Thr     | Leu     | Lys 85  | Val     | Met     | Lys     | Gln     | Pro 90  | Arg     | Cys    | Gly    | Val    | Pro    | Asp 95  |
| Val     | Ala      | Gln     | Phe 100 | Val     | Leu     | Thr     | Glu     | Gly 105 | Asn     | Pro     | Arg    | Trp    | Glu    | Gln    | Thr     |
| His     | Leu      | Thr 115 | Tyr     | Arg     | Ile     | Glu     | Asn 120 | Tyr     | Thr     | Pro     | Asp    | Leu    | Pro    | Arg    | Ala     |
| Asp     | Val 130  | Asp     | His     | Ala     | Ile     | Glu 135 | Lys     | Ala     | Phe     | Gln     | Leu    | Trp    | Ser    | Asn    | Val     |
| Thr 145 | Pro      | Leu     | Thr     | Phe     | Thr 150 | Lys     | Val     | Ser     | Glu     | Gly 155 | Gln    | Ala    | Asp    | Ile    | Met 160 |
| Ile     | Ser      | Phe     | Val     | Arg 165 | Gly     | Asp     | His     | Arg     | Asp 170 | Asn     | Ser    | Pro    | Phe    | Asp    | Gly 175 |
| Pro     | Gly      | Gly     | Asn 180 | Leu     | Ala     | His     | Ala     | Phe 185 | Gln     | Pro     | Gly    | Pro    | Gly    | Ile    | Gly     |
| Gly     | Asp 195  | Ala     | His     | Phe     | Asp     | Glu     | Asp 200 | Glu     | Arg     | Trp     | Thr    | Asn    | Asn    | Phe    | Arg     |
| Glu     | Tyr 210  | Asn     | Leu     | His     | Arg     | Val 215 | Ala     | Ala     | His     | Glu     | Leu    | Gly    | His    | Ser    | Leu     |
| Gly 225 | Leu      | Ser     | His     | Ser     | Thr 230 | Asp     | Ile     | Gly     | Ala     | Leu     | Met    | Tyr    | Pro    | Ser    | Tyr 240 |
| Thr     | Phe      | Ser     | Gly     | Asp 245 | Val     | Gln     | Leu     | Ala     | Gln 250 | Asp     | Asp    | Ile    | Asp    | Gly    | Ile 255 |
| Gln     | Ala      | Ile     | Tyr 260 | Gly     | Arg     | Ser     | Gln     | Asn 265 | Pro     | Val     | Gln    | Pro    | Ile    | Gly    | Pro     |
| Gln     | Thr 275  | Pro     | Lys     | Ala     | Cys     | Asp     | Ser 280 | Lys     | Leu     | Thr     | Phe    | Asp    | Ala    | Ile    | Thr     |
| Thr     | Ile 290  | Arg     | Gly     | Glu     | Val     | Met 295 | Phe     | Phe     | Lys     | Asp     | Arg    | Phe    | Tyr    | Met    | Arg     |
| Thr 305 | Asn      | Pro     | Phe     | Tyr     | Pro 310 | Glu     | Val     | Glu     | Leu     | Asn 315 | Phe    | Ile    | Ser    | Val    | Phe 320 |
| Trp     | Pro      | Gln     | Leu     | Pro 325 | Asn     | Gly     | Leu     | Glu     | Ala 330 | Ala     | Tyr    | Glu    | Phe    | Ala    | Asp 335 |

Arg Asp Glu Val Arg Phe Phe Lys Gly Asn Lys Tyr Trp Ala Val Gln  
 340 345 350  
 Gly Gln Asn Val Leu His Gly Tyr Pro Lys Asp Ile Tyr Ser Ser Phe  
 355 360 365  
 Gly Phe Pro Arg Thr Val Lys His Ile Asp Ala Ala Leu Ser Glu Glu  
 370 375 380  
 Asn Thr Gly Lys Thr Tyr Phe Phe Val Ala Asn Lys Tyr Trp Arg Tyr  
 385 390 395 400  
 Asp Glu Tyr Lys Arg Ser Met Asp Pro Gly Tyr Pro Lys Met Ile Ala  
 405 410 415  
 His Asp Phe Pro Gly Ile Gly His Lys Val Asp Ala Val Phe Met Lys  
 420 425 430  
 Asp Gly Phe Phe Tyr Phe Phe His Gly Thr Arg Gln Tyr Lys Phe Asp  
 435 440 445  
 Pro Lys Thr Lys Arg Ile Leu Thr Leu Gln Lys Ala Asn Ser Trp Phe  
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 Asn Cys Arg Lys Asn  
 465

<210> 77  
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 <212> PRT  
 <213> Homo sapiens

<400> 77  
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 1 5 10 15  
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 20 25 30  
 Ala Thr Ile Leu Lys Glu Lys Pro Asp Pro Asn Asn Leu Val Phe Gly  
 35 40 45  
 Thr Val Phe Thr Asp His Met Leu Thr Val Glu Trp Ser Ser Glu Phe  
 50 55 60  
 Gly Trp Glu Lys Pro His Ile Lys Pro Leu Gln Asn Leu Ser Leu His  
 65 70 75 80  
 Pro Gly Ser Ser Ala Leu His Tyr Ala Val Glu Leu Phe Glu Gly Leu  
 85 90 95  
 Lys Ala Phe Arg Gly Val Asp Asn Lys Ile Arg Leu Phe Gln Pro Asn  
 100 105 110  
 Leu Asn Met Asp Arg Met Tyr Arg Ser Ala Val Arg Ala Thr Leu Pro  
 115 120 125  
 Val Phe Asp Lys Glu Glu Leu Leu Glu Cys Ile Gln Gln Leu Val Lys  
 130 135 140  
 Leu Asp Gln Glu Trp Val Pro Tyr Ser Thr Ser Ala Ser Leu Tyr Ile  
 145 150 155 160  
 Arg Pro Ala Phe Ile Gly Thr Glu Pro Ser Leu Gly Val Lys Lys Pro  
 165 170 175  
 Thr Lys Ala Leu Leu Phe Val Leu Leu Ser Pro Val Gly Pro Tyr Phe  
 180 185 190  
 Ser Ser Gly Thr Phe Asn Pro Val Ser Leu Trp Ala Asn Pro Lys Tyr  
 195 200 205  
 Val Arg Ala Trp Lys Gly Gly Thr Gly Asp Cys Lys Met Gly Gly Asn  
 210 215 220  
 Tyr Gly Ser Ser Leu Phe Ala Gln Cys Glu Asp Val Asp Asn Gly Cys  
 225 230 235 240  
 Gln Gln Val Leu Trp Leu Tyr Gly Arg Asp His Gln Ile Thr Glu Val  
 245 250 255  
 Gly Thr Met Asn Leu Phe Leu Tyr Trp Ile Asn Glu Asp Gly Glu Glu  
 260 265 270  
 Glu Leu Ala Thr Pro Pro Leu Asp Gly Ile Ile Leu Pro Gly Val Thr  
 275 280 285

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Arg | Cys | Ile | Leu | Asp | Leu | Ala | His | Gln | Trp | Gly | Glu | Phe | Lys | Val |
| 290 |     |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Ser | Glu | Arg | Tyr | Leu | Thr | Met | Asp | Asp | Leu | Thr | Thr | Ala | Leu | Glu | Gly |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |
| Asn | Arg | Val | Arg | Glu | Met | Phe | Ser | Ser | Gly | Thr | Ala | Cys | Val | Val | Cys |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Pro | Val | Ser | Asp | Ile | Leu | Tyr | Lys | Gly | Glu | Thr | Ile | His | Ile | Pro | Thr |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Met | Glu | Asn | Gly | Pro | Lys | Leu | Ala | Ser | Arg | Ile | Leu | Ser | Lys | Leu | Thr |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Asp | Ile | Gln | Tyr | Gly | Arg | Glu | Glu | Ser | Asp | Trp | Thr | Ile | Val | Leu | Ser |
| 370 |     |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |

<210> 78  
 <211> 381  
 <212> PRT  
 <213> Homo sapiens

|          |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <400> 78 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Met      | His | Leu | Leu | Ala | Ile | Leu | Phe | Cys | Ala | Leu | Trp | Ser | Ala | Val | Leu |
| 1        |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Ala      | Glu | Asn | Ser | Asp | Asp | Tyr | Asp | Leu | Met | Tyr | Val | Asn | Leu | Asp | Asn |
|          |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Glu      | Ile | Asp | Asn | Gly | Leu | His | Pro | Thr | Glu | Asp | Pro | Thr | Pro | Cys | Asp |
|          |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Cys      | Gly | Gln | Glu | His | Ser | Glu | Trp | Asp | Lys | Leu | Phe | Ile | Met | Leu | Glu |
|          | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Asn      | Ser | Gln | Met | Arg | Glu | Arg | Met | Leu | Leu | Gln | Ala | Thr | Asp | Asp | Val |
| 65       |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |
| Leu      | Arg | Gly | Glu | Leu | Gln | Arg | Leu | Arg | Glu | Glu | Leu | Gly | Arg | Leu | Ala |
|          |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Glu      | Ser | Leu | Ala | Arg | Pro | Cys | Ala | Pro | Gly | Ala | Pro | Ala | Glu | Ala | Arg |
|          |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Leu      | Thr | Ser | Ala | Leu | Asp | Glu | Leu | Gln | Ala | Thr | Arg | Asp | Ala | Gly |     |
|          |     | 115 |     |     |     | 120 |     |     |     |     |     | 125 |     |     |     |
| Arg      | Arg | Leu | Ala | Arg | Met | Glu | Gly | Ala | Glu | Ala | Gln | Arg | Pro | Glu | Glu |
|          | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Ala      | Gly | Arg | Ala | Leu | Ala | Ala | Val | Leu | Glu | Glu | Leu | Arg | Gln | Thr | Arg |
| 145      |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
| Ala      | Asp | Leu | His | Ala | Val | Gln | Gly | Trp | Ala | Ala | Arg | Ser | Trp | Leu | Pro |
|          |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Ala      | Gly | Cys | Glu | Thr | Ala | Ile | Leu | Phe | Pro | Met | Arg | Ser | Lys | Lys | Ile |
|          |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Phe      | Gly | Ser | Val | His | Pro | Val | Arg | Pro | Met | Arg | Leu | Glu | Ser | Phe | Ser |
|          |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Ala      | Cys | Ile | Trp | Val | Lys | Ala | Thr | Asp | Val | Leu | Asn | Lys | Thr | Ile | Leu |
|          | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Phe      | Ser | Tyr | Gly | Thr | Lys | Arg | Asn | Pro | Tyr | Glu | Ile | Gln | Leu | Tyr | Leu |
| 225      |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Ser      | Tyr | Gln | Ser | Ile | Val | Phe | Val | Val | Gly | Gly | Glu | Glu | Asn | Lys | Leu |
|          |     |     | 245 |     |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Val      | Ala | Glu | Ala | Met | Val | Ser | Leu | Gly | Arg | Trp | Thr | His | Leu | Cys | Gly |
|          |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Thr      | Trp | Asn | Ser | Glu | Glu | Gly | Leu | Thr | Ser | Leu | Trp | Val | Asn | Gly | Glu |
|          |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Leu      | Ala | Ala | Thr | Thr | Val | Glu | Met | Ala | Thr | Gly | His | Ile | Val | Pro | Glu |
|          | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Gly      | Gly | Ile | Leu | Gln | Ile | Gly | Gln | Glu | Lys | Asn | Gly | Cys | Cys | Val | Gly |
| 305      |     |     |     | 310 |     |     |     |     |     | 315 |     |     |     |     | 320 |
| Gly      | Gly | Phe | Asp | Glu | Thr | Leu | Ala | Phe | Ser | Gly | Arg | Leu | Thr | Gly | Phe |
|          |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |

Asn Ile Trp Asp Ser Val Leu Ser Asn Glu Glu Ile Arg Glu Thr Gly  
 340 345 350  
 Gly Ala Glu Ser Cys His Ile Arg Gly Asn Ile Val Gly Trp Gly Val  
 355 360 365  
 Thr Glu Ile Gln Pro His Gly Gly Ala Gln Tyr Val Ser  
 370 375 380

<210> 79  
 <211> 2813  
 <212> PRT  
 <213> Homo sapiens

<400> 79  
 Met Ile Pro Ala Arg Phe Ala Gly Val Leu Leu Ala Leu Ala Leu Ile  
 1 5 10 15  
 Leu Pro Gly Thr Leu Cys Ala Glu Gly Thr Arg Gly Arg Ser Ser Thr  
 20 25 30  
 Ala Arg Cys Ser Leu Phe Gly Ser Asp Phe Val Asn Thr Phe Asp Gly  
 35 40 45  
 Ser Met Tyr Ser Phe Ala Gly Tyr Cys Ser Tyr Leu Leu Ala Gly Gly  
 50 55 60  
 Cys Gln Lys Arg Ser Phe Ser Ile Ile Gly Asp Phe Gln Asn Gly Lys  
 65 70 75 80  
 Arg Val Ser Leu Ser Val Tyr Leu Gly Glu Phe Phe Asp Ile His Leu  
 85 90 95  
 Phe Val Asn Gly Thr Val Thr Gln Gly Asp Gln Arg Val Ser Met Pro  
 100 105 110  
 Tyr Ala Ser Lys Gly Leu Tyr Leu Glu Thr Glu Ala Gly Tyr Tyr Lys  
 115 120 125  
 Leu Ser Gly Glu Ala Tyr Gly Phe Val Ala Arg Ile Asp Gly Ser Gly  
 130 135 140  
 Asn Phe Gln Val Leu Leu Ser Asp Arg Tyr Phe Asn Lys Thr Cys Gly  
 145 150 155 160  
 Leu Cys Gly Asn Phe Asn Ile Phe Ala Glu Asp Asp Phe Met Thr Gln  
 165 170 175  
 Glu Gly Thr Leu Thr Ser Asp Pro Tyr Asp Phe Ala Asn Ser Trp Ala  
 180 185 190  
 Leu Ser Ser Gly Glu Gln Trp Cys Glu Arg Ala Ser Pro Pro Ser Ser  
 195 200 205  
 Ser Cys Asn Ile Ser Ser Gly Glu Met Gln Lys Gly Leu Trp Glu Gln  
 210 215 220  
 Cys Gln Leu Leu Lys Ser Thr Ser Val Phe Ala Arg Cys His Pro Leu  
 225 230 235 240  
 Val Asp Pro Glu Pro Phe Val Ala Leu Cys Glu Lys Thr Leu Cys Glu  
 245 250 255  
 Cys Ala Gly Gly Leu Glu Cys Ala Cys Pro Ala Leu Leu Glu Tyr Ala  
 260 265 270  
 Arg Thr Cys Ala Gln Glu Gly Met Val Leu Tyr Gly Trp Thr Asp His  
 275 280 285  
 Ser Ala Cys Ser Pro Val Cys Pro Ala Gly Met Glu Tyr Arg Gln Cys  
 290 295 300  
 Val Ser Pro Cys Ala Arg Thr Cys Gln Ser Leu His Ile Asn Glu Met  
 305 310 315 320  
 Cys Gln Glu Arg Cys Val Asp Gly Cys Ser Cys Pro Glu Gly Gln Leu  
 325 330 335  
 Leu Asp Glu Gly Leu Cys Val Glu Ser Thr Glu Cys Pro Cys Val His  
 340 345 350  
 Ser Gly Lys Arg Tyr Pro Pro Gly Thr Ser Leu Ser Arg Asp Cys Asn  
 355 360 365  
 Thr Cys Ile Cys Arg Asn Ser Gln Trp Ile Cys Ser Asn Glu Glu Cys  
 370 375 380

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Gly | Glu | Cys | Leu | Val | Thr | Gly | Gln | Ser | His | Phe | Lys | Ser | Phe | Asp |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Asn | Arg | Tyr | Phe | Thr | Phe | Ser | Gly | Ile | Cys | Gln | Tyr | Leu | Leu | Ala | Arg |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Asp | Cys | Gln | Asp | His | Ser | Phe | Ser | Ile | Val | Ile | Glu | Thr | Val | Gln | Cys |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Ala | Asp | Asp | Arg | Asp | Ala | Val | Cys | Thr | Arg | Ser | Val | Thr | Val | Arg | Leu |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Pro | Gly | Leu | His | Asn | Ser | Leu | Val | Lys | Leu | Lys | His | Gly | Ala | Gly | Val |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |
| Ala | Met | Asp | Gly | Gln | Asp | Ile | Gln | Leu | Pro | Leu | Leu | Lys | Gly | Asp | Leu |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |
| Arg | Ile | Gln | His | Thr | Val | Thr | Ala | Ser | Val | Arg | Leu | Ser | Tyr | Gly | Glu |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |
| Asp | Leu | Gln | Met | Asp | Trp | Asp | Gly | Arg | Gly | Arg | Leu | Leu | Val | Lys | Leu |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |
| Ser | Pro | Val | Tyr | Ala | Gly | Lys | Thr | Cys | Gly | Leu | Cys | Gly | Asn | Tyr | Asn |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |
| Gly | Asn | Gln | Gly | Asp | Asp | Phe | Leu | Thr | Pro | Ser | Gly | Leu | Ala | Glu | Pro |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |
| Arg | Val | Glu | Asp | Phe | Gly | Asn | Ala | Trp | Lys | Leu | His | Gly | Asp | Cys | Gln |
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |
| Asp | Leu | Gln | Lys | Gln | His | Ser | Asp | Pro | Cys | Ala | Leu | Asn | Pro | Arg | Met |
|     |     |     |     | 565 |     |     |     |     | 570 |     |     |     |     | 575 |     |
| Thr | Arg | Phe | Ser | Glu | Glu | Ala | Cys | Ala | Val | Leu | Thr | Ser | Pro | Thr | Phe |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |
| Glu | Ala | Cys | His | Arg | Ala | Val | Ser | Pro | Leu | Pro | Tyr | Leu | Arg | Asn | Cys |
|     |     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |
| Arg | Tyr | Asp | Val | Cys | Ser | Cys | Ser | Asp | Gly | Arg | Glu | Cys | Leu | Cys | Gly |
|     | 610 |     |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |
| Ala | Leu | Ala | Ser | Tyr | Ala | Ala | Cys | Ala | Gly | Arg | Gly | Val | Arg | Val |     |
| 625 |     |     |     |     | 630 |     |     |     | 635 |     |     |     |     | 640 |     |
| Ala | Trp | Arg | Glu | Pro | Gly | Arg | Cys | Glu | Leu | Asn | Cys | Pro | Lys | Gly | Gln |
|     |     |     |     | 645 |     |     |     | 650 |     |     |     |     |     | 655 |     |
| Val | Tyr | Leu | Gln | Cys | Gly | Thr | Pro | Cys | Asn | Leu | Thr | Cys | Arg | Ser | Leu |
|     |     |     | 660 |     |     |     |     | 665 |     |     |     |     | 670 |     |     |
| Ser | Tyr | Pro | Asp | Glu | Glu | Cys | Asn | Glu | Ala | Cys | Leu | Glu | Gly | Cys | Phe |
|     |     | 675 |     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |
| Cys | Pro | Pro | Gly | Leu | Tyr | Met | Asp | Glu | Arg | Gly | Asp | Cys | Val | Pro | Lys |
|     | 690 |     |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     |
| Ala | Gln | Cys | Pro | Cys | Tyr | Tyr | Asp | Gly | Glu | Ile | Phe | Gln | Pro | Glu | Asp |
| 705 |     |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     | 720 |
| Ile | Phe | Ser | Asp | His | His | Thr | Met | Cys | Tyr | Cys | Glu | Asp | Gly | Phe | Met |
|     |     |     |     | 725 |     |     |     |     | 730 |     |     |     |     | 735 |     |
| His | Cys | Thr | Met | Ser | Gly | Val | Pro | Gly | Ser | Leu | Leu | Pro | Asp | Ala | Val |
|     |     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |     |     |
| Leu | Ser | Ser | Pro | Leu | Ser | His | Arg | Ser | Lys | Arg | Ser | Leu | Ser | Cys | Arg |
|     |     | 755 |     |     |     |     | 760 |     |     |     |     | 765 |     |     |     |
| Pro | Pro | Met | Val | Lys | Leu | Val | Cys | Pro | Ala | Asp | Asn | Leu | Arg | Ala | Glu |
|     | 770 |     |     |     |     | 775 |     |     |     |     | 780 |     |     |     |     |
| Gly | Leu | Glu | Cys | Thr | Lys | Thr | Cys | Gln | Asn | Tyr | Asp | Leu | Glu | Cys | Met |
| 785 |     |     |     |     | 790 |     |     |     |     | 795 |     |     |     |     | 800 |
| Ser | Met | Gly | Cys | Val | Ser | Gly | Cys | Leu | Cys | Pro | Pro | Gly | Met | Val | Arg |
|     |     |     |     | 805 |     |     |     |     | 810 |     |     |     |     | 815 |     |
| His | Glu | Asn | Arg | Cys | Val | Ala | Leu | Glu | Arg | Cys | Pro | Cys | Phe | His | Gln |
|     |     | 820 |     |     |     |     |     | 825 |     |     |     |     | 830 |     |     |
| Gly | Lys | Glu | Tyr | Ala | Pro | Gly | Glu | Thr | Val | Lys | Ile | Gly | Cys | Asn | Thr |
|     |     | 835 |     |     |     |     | 840 |     |     |     |     | 845 |     |     |     |
| Cys | Val | Cys | Arg | Asp | Arg | Lys | Trp | Asn | Cys | Thr | Asp | His | Val | Cys | Asp |
|     | 850 |     |     |     |     | 855 |     |     |     |     | 860 |     |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|
| Ala | Thr | Cys | Ser | Thr | Ile | Gly | Met | Ala | His | Tyr | Leu | Thr | Phe | Asp | Gly | 865  | 870  | 875  | 880  |
| Leu | Lys | Tyr | Leu | Phe | Pro | Gly | Glu | Cys | Gln | Tyr | Val | Leu | Val | Gln | Asp | 885  | 890  | 895  |      |
| Tyr | Cys | Gly | Ser | Asn | Pro | Gly | Thr | Phe | Arg | Ile | Leu | Val | Gly | Asn | Lys | 900  | 905  | 910  |      |
| Gly | Cys | Ser | His | Pro | Ser | Val | Lys | Cys | Lys | Lys | Arg | Val | Thr | Ile | Leu | 915  | 920  | 925  |      |
| Val | Glu | Gly | Gly | Glu | Ile | Glu | Leu | Phe | Asp | Gly | Glu | Val | Asn | Val | Lys | 930  | 935  | 940  |      |
| Arg | Pro | Met | Lys | Asp | Glu | Thr | His | Phe | Glu | Val | Val | Glu | Ser | Gly | Arg | 945  | 950  | 955  | 960  |
| Tyr | Ile | Ile | Leu | Leu | Leu | Gly | Lys | Ala | Leu | Ser | Val | Val | Trp | Asp | Arg | 965  | 970  | 975  |      |
| His | Leu | Ser | Ile | Ser | Val | Val | Leu | Lys | Gln | Thr | Tyr | Gln | Glu | Lys | Val | 980  | 985  | 990  |      |
| Cys | Gly | Leu | Cys | Gly | Asn | Phe | Asp | Gly | Ile | Gln | Asn | Asn | Asp | Leu | Thr | 995  | 1000 | 1005 |      |
| Ser | Ser | Asn | Leu | Gln | Val | Glu | Glu | Asp | Pro | Val | Asp | Phe | Gly | Asn | Ser | 1010 | 1015 | 1020 |      |
| Trp | Lys | Val | Ser | Ser | Gln | Cys | Ala | Asp | Thr | Arg | Lys | Val | Pro | Leu | Asp | 1025 | 1030 | 1035 | 1040 |
| Ser | Ser | Pro | Ala | Thr | Cys | His | Asn | Asn | Ile | Met | Lys | Gln | Thr | Met | Val | 1045 | 1050 | 1055 |      |
| Asp | Ser | Ser | Cys | Arg | Ile | Leu | Thr | Ser | Asp | Val | Phe | Gln | Asp | Cys | Asn | 1060 | 1065 | 1070 |      |
| Lys | Leu | Val | Asp | Pro | Glu | Pro | Tyr | Leu | Asp | Val | Cys | Ile | Tyr | Asp | Thr | 1075 | 1080 | 1085 |      |
| Cys | Ser | Cys | Glu | Ser | Ile | Gly | Asp | Cys | Ala | Cys | Phe | Cys | Asp | Thr | Ile | 1090 | 1095 | 1100 |      |
| Ala | Ala | Tyr | Ala | His | Val | Cys | Ala | Gln | His | Gly | Lys | Val | Val | Thr | Trp | 1105 | 1110 | 1115 | 1120 |
| Arg | Thr | Ala | Thr | Leu | Cys | Pro | Gln | Ser | Cys | Glu | Glu | Arg | Asn | Leu | Arg | 1125 | 1130 | 1135 |      |
| Glu | Asn | Gly | Tyr | Glu | Cys | Glu | Trp | Arg | Tyr | Asn | Ser | Cys | Ala | Pro | Ala | 1140 | 1145 | 1150 |      |
| Cys | Gln | Val | Thr | Cys | Gln | His | Pro | Glu | Pro | Leu | Ala | Cys | Pro | Val | Gln | 1155 | 1160 | 1165 |      |
| Cys | Val | Glu | Gly | Cys | His | Ala | His | Cys | Pro | Pro | Gly | Lys | Ile | Leu | Asp | 1170 | 1175 | 1180 |      |
| Glu | Leu | Leu | Gln | Thr | Cys | Val | Asp | Pro | Glu | Asp | Cys | Pro | Val | Cys | Glu | 1185 | 1190 | 1195 | 1200 |
| Val | Ala | Gly | Arg | Arg | Phe | Ala | Ser | Gly | Lys | Lys | Val | Thr | Leu | Asn | Pro | 1205 | 1210 | 1215 |      |
| Ser | Asp | Pro | Glu | His | Cys | Gln | Ile | Cys | His | Cys | Asp | Val | Val | Asn | Leu | 1220 | 1225 | 1230 |      |
| Thr | Cys | Glu | Ala | Cys | Gln | Glu | Pro | Gly | Gly | Leu | Val | Val | Pro | Pro | Thr | 1235 | 1240 | 1245 |      |
| Asp | Ala | Pro | Val | Ser | Pro | Thr | Thr | Leu | Tyr | Val | Glu | Asp | Ile | Ser | Glu | 1250 | 1255 | 1260 |      |
| Pro | Pro | Leu | His | Asp | Phe | Tyr | Cys | Ser | Arg | Leu | Leu | Asp | Leu | Val | Phe | 1265 | 1270 | 1275 | 1280 |
| Leu | Leu | Asp | Gly | Ser | Ser | Arg | Leu | Ser | Glu | Ala | Glu | Phe | Glu | Val | Leu | 1285 | 1290 | 1295 |      |
| Lys | Ala | Phe | Val | Asp | Met | Met | Glu | Arg | Leu | Arg | Ile | Ser | Gln | Lys |     | 1300 | 1305 | 1310 |      |
| Trp | Val | Arg | Val | Ala | Val | Val | Glu | Tyr | His | Asp | Gly | Ser | His | Ala | Tyr | 1315 | 1320 | 1325 |      |
| Ile | Gly | Leu | Lys | Asp | Arg | Lys | Arg | Pro | Ser | Glu | Leu | Arg | Arg | Ile | Ala | 1330 | 1335 | 1340 |      |



Ser Gln Val Lys Tyr Ala Gly Ser Gln Val Ala Ser Thr Ser Glu Val  
 1345 1350 1355 1360  
 Leu Lys Tyr Thr Leu Phe Gln Ile Phe Ser Lys Ile Asp Arg Pro Glu  
 1365 1370 1375  
 Ala Ser Arg Ile Ala Leu Leu Leu Met Ala Ser Gln Glu Pro Gln Arg  
 1380 1385 1390  
 Met Ser Arg Asn Phe Val Arg Tyr Val Gln Gly Leu Lys Lys Lys  
 1395 1400 1405  
 Val Ile Val Ile Pro Val Gly Ile Gly Pro His Ala Asn Leu Lys Gln  
 1410 1415 1420  
 Ile Arg Leu Ile Glu Lys Gln Ala Pro Glu Asn Lys Ala Phe Val Leu  
 1425 1430 1435 1440  
 Ser Ser Val Asp Glu Leu Glu Gln Gln Arg Asp Glu Ile Val Ser Tyr  
 1445 1450 1455  
 Leu Cys Asp Leu Ala Pro Glu Ala Pro Pro Pro Thr Leu Pro Pro His  
 1460 1465 1470  
 Met Ala Gln Val Thr Val Gly Pro Gly Leu Leu Gly Val Ser Thr Leu  
 1475 1480 1485  
 Gly Pro Lys Arg Asn Ser Met Val Leu Asp Val Ala Phe Val Leu Glu  
 1490 1495 1500  
 Gly Ser Asp Lys Ile Gly Glu Ala Asp Phe Asn Arg Ser Lys Glu Phe  
 1505 1510 1515 1520  
 Met Glu Glu Val Ile Gln Arg Met Asp Val Gly Gln Asp Ser Ile His  
 1525 1530 1535  
 Val Thr Val Leu Gln Tyr Ser Tyr Met Val Thr Val Glu Tyr Pro Phe  
 1540 1545 1550  
 Ser Glu Ala Gln Ser Lys Gly Asp Ile Leu Gln Arg Val Arg Glu Ile  
 1555 1560 1565  
 Arg Tyr Gln Gly Gly Asn Arg Thr Asn Thr Gly Leu Ala Leu Arg Tyr  
 1570 1575 1580  
 Leu Ser Asp His Ser Phe Leu Val Ser Gln Gly Asp Arg Glu Gln Ala  
 1585 1590 1595 1600  
 Pro Asn Leu Val Tyr Met Val Thr Gly Asn Pro Ala Ser Asp Glu Ile  
 1605 1610 1615  
 Lys Arg Leu Pro Gly Asp Ile Gln Val Val Pro Ile Gly Val Gly Pro  
 1620 1625 1630  
 Asn Ala Asn Val Gln Glu Leu Glu Arg Ile Gly Trp Pro Asn Ala Pro  
 1635 1640 1645  
 Ile Leu Ile Gln Asp Phe Glu Thr Leu Pro Arg Glu Ala Pro Asp Leu  
 1650 1655 1660  
 Val Leu Gln Arg Cys Cys Ser Gly Glu Gly Leu Gln Ile Pro Thr Leu  
 1665 1670 1675 1680  
 Ser Pro Ala Pro Asp Cys Ser Gln Pro Leu Asp Val Ile Leu Leu Leu  
 1685 1690 1695  
 Asp Gly Ser Ser Ser Phe Pro Ala Ser Tyr Phe Asp Glu Met Lys Ser  
 1700 1705 1710  
 Phe Ala Lys Ala Phe Ile Ser Lys Ala Asn Ile Gly Pro Arg Leu Thr  
 1715 1720 1725  
 Gln Val Ser Val Leu Gln Tyr Gly Ser Ile Thr Thr Ile Asp Val Pro  
 1730 1735 1740  
 Trp Asn Val Val Pro Glu Lys Ala His Leu Leu Ser Leu Val Asp Val  
 1745 1750 1755 1760  
 Met Gln Arg Glu Gly Gly Pro Ser Gln Ile Gly Asp Ala Leu Gly Phe  
 1765 1770 1775  
 Ala Val Arg Tyr Leu Thr Ser Glu Met His Gly Ala Arg Pro Gly Ala  
 1780 1785 1790  
 Ser Lys Ala Val Val Ile Leu Val Thr Asp Val Ser Val Asp Ser Val  
 1795 1800 1805  
 Asp Ala Ala Ala Asp Ala Ala Arg Ser Asn Arg Val Thr Val Phe Pro  
 1810 1815 1820

|   |      |      |      |      |
|---|------|------|------|------|
| Ile Gly Ile Gly Asp Arg Tyr Asp Ala Ala Gln Leu Arg Ile Leu Ala | 1825 | 1830 | 1835 | 1840 |
| Gly Pro Ala Gly Asp Ser Asn Val Val Lys Leu Gln Arg Ile Glu Asp | 1845 | 1850 | 1855 |      |
| Leu Pro Thr Met Val Thr Leu Gly Asn Ser Phe Leu His Lys Leu Cys | 1860 | 1865 | 1870 |      |
| Ser Gly Phe Val Arg Ile Cys Met Asp Glu Asp Gly Asn Glu Lys Arg | 1875 | 1880 | 1885 |      |
| Pro Gly Asp Val Trp Thr Leu Pro Asp Gln Cys His Thr Val Thr Cys | 1890 | 1895 | 1900 |      |
| Gln Pro Asp Gly Gln Thr Leu Leu Lys Ser His Arg Val Asn Cys Asp | 1905 | 1910 | 1915 | 1920 |
| Arg Gly Leu Arg Pro Ser Cys Pro Asn Ser Gln Ser Pro Val Lys Val | 1925 | 1930 | 1935 |      |
| Glu Glu Thr Cys Gly Cys Arg Trp Thr Cys Pro Cys Val Cys Thr Gly | 1940 | 1945 | 1950 |      |
| Ser Ser Thr Arg His Ile Val Thr Phe Asp Gly Gln Asn Phe Lys Leu | 1955 | 1960 | 1965 |      |
| Thr Gly Ser Cys Ser Tyr Val Leu Phe Gln Asn Lys Glu Gln Asp Leu | 1970 | 1975 | 1980 |      |
| Glu Val Ile Leu His Asn Gly Ala Cys Ser Pro Gly Ala Arg Gln Gly | 1985 | 1990 | 1995 | 2000 |
| Cys Met Lys Ser Ile Glu Val Lys His Ser Ala Leu Ser Val Glu Leu | 2005 | 2010 | 2015 |      |
| His Ser Asp Met Glu Val Thr Val Asn Gly Arg Leu Val Ser Val Pro | 2020 | 2025 | 2030 |      |
| Tyr Val Gly Gly Asn Met Glu Val Asn Val Tyr Gly Ala Ile Met His | 2035 | 2040 | 2045 |      |
| Glu Val Arg Phe Asn His Leu Gly His Ile Phe Thr Phe Thr Pro Gln | 2050 | 2055 | 2060 |      |
| Asn Asn Glu Phe Gln Leu Gln Leu Ser Pro Lys Thr Phe Ala Ser Lys | 2065 | 2070 | 2075 | 2080 |
| Thr Tyr Gly Leu Cys Gly Ile Cys Asp Glu Asn Gly Ala Asn Asp Phe | 2085 | 2090 | 2095 |      |
| Met Leu Arg Asp Gly Thr Val Thr Thr Asp Trp Lys Thr Leu Val Gln | 2100 | 2105 | 2110 |      |
| Glu Trp Thr Val Gln Arg Pro Gly Gln Thr Cys Gln Pro Ile Leu Glu | 2115 | 2120 | 2125 |      |
| Glu Gln Cys Leu Val Pro Asp Ser Ser His Cys Gln Val Leu Leu Leu | 2130 | 2135 | 2140 |      |
| Pro Leu Phe Ala Glu Cys His Lys Val Leu Ala Pro Ala Thr Phe Tyr | 2145 | 2150 | 2155 | 2160 |
| Ala Ile Cys Gln Gln Asp Ser Cys His Gln Glu Gln Val Cys Glu Val | 2165 | 2170 | 2175 |      |
| Ile Ala Ser Tyr Ala His Leu Cys Arg Thr Asn Gly Val Cys Val Asp | 2180 | 2185 | 2190 |      |
| Trp Arg Thr Pro Asp Phe Cys Ala Met Ser Cys Pro Pro Ser Leu Val | 2195 | 2200 | 2205 |      |
| Tyr Asn His Cys Glu His Gly Cys Pro Arg His Cys Asp Gly Asn Val | 2210 | 2215 | 2220 |      |
| Ser Ser Cys Gly Asp His Pro Ser Glu Gly Cys Phe Cys Pro Pro Asp | 2225 | 2230 | 2235 | 2240 |
| Lys Val Met Leu Glu Gly Ser Cys Val Pro Glu Glu Ala Cys Thr Gln | 2245 | 2250 | 2255 |      |
| Cys Ile Gly Glu Asp Gly Val Gln His Gln Phe Leu Glu Ala Trp Val | 2260 | 2265 | 2270 |      |
| Pro Asp His Gln Pro Cys Gln Ile Cys Thr Cys Leu Ser Gly Arg Lys | 2275 | 2280 | 2285 |      |
| Val Asn Cys Thr Thr Gln Pro Cys Pro Thr Ala Lys Ala Pro Thr Cys | 2290 | 2295 | 2300 |      |

|      |      |     |      |      |      |      |      |      |      |      |      |      |      |      |      |  |
|------|------|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|--|
| Gly  | Leu  | Cys | Glu  | Val  | Ala  | Arg  | Leu  | Arg  | Gln  | Asn  | Ala  | Asp  | Gln  | Cys  | Cys  |  |
| 2305 |      |     |      |      | 2310 |      |      |      | 2315 |      |      |      |      |      | 2320 |  |
| Pro  | Glu  | Tyr | Glu  | Cys  | Val  | Cys  | Asp  | Pro  | Val  | Ser  | Cys  | Asp  | Leu  | Pro  | Pro  |  |
|      |      |     |      | 2325 |      |      |      |      | 2330 |      |      |      |      |      | 2335 |  |
| Val  | Pro  | His | Cys  | Glu  | Arg  | Gly  | Leu  | Gln  | Pro  | Thr  | Leu  | Thr  | Asn  | Pro  | Gly  |  |
|      |      |     | 2340 |      |      |      |      | 2345 |      |      |      |      | 2350 |      |      |  |
| Glu  | Cys  | Arg | Pro  | Asn  | Phe  | Thr  | Cys  | Ala  | Cys  | Arg  | Lys  | Glu  | Glu  | Cys  | Lys  |  |
|      | 2355 |     |      |      |      |      | 2360 |      |      |      |      | 2365 |      |      |      |  |
| Arg  | Val  | Ser | Pro  | Pro  | Ser  | Cys  | Pro  | Pro  | His  | Arg  | Leu  | Pro  | Thr  | Leu  | Arg  |  |
|      | 2370 |     |      |      |      | 2375 |      |      |      |      | 2380 |      |      |      |      |  |
| Lys  | Thr  | Gln | Cys  | Cys  | Asp  | Glu  | Tyr  | Glu  | Cys  | Ala  | Cys  | Asn  | Cys  | Val  | Asn  |  |
| 2385 |      |     |      |      | 2390 |      |      |      |      | 2395 |      |      |      |      | 2400 |  |
| Ser  | Thr  | Val | Ser  | Cys  | Pro  | Leu  | Gly  | Tyr  | Leu  | Ala  | Ser  | Thr  | Ala  | Thr  | Asn  |  |
|      |      |     |      | 2405 |      |      |      |      | 2410 |      |      |      |      |      | 2415 |  |
| Asp  | Cys  | Gly | Cys  | Thr  | Thr  | Thr  | Thr  | Cys  | Leu  | Pro  | Asp  | Lys  | Val  | Cys  | Val  |  |
|      |      |     | 2420 |      |      |      |      | 2425 |      |      |      |      | 2430 |      |      |  |
| His  | Arg  | Ser | Thr  | Ile  | Tyr  | Pro  | Val  | Gly  | Gln  | Phe  | Trp  | Glu  | Gly  | Gly  | Cys  |  |
|      | 2435 |     |      |      |      | 2440 |      |      |      |      |      | 2445 |      |      |      |  |
| Asp  | Val  | Cys | Thr  | Cys  | Thr  | Asp  | Met  | Glu  | Asp  | Ala  | Val  | Met  | Gly  | Leu  | Arg  |  |
|      | 2450 |     |      |      |      | 2455 |      |      |      |      | 2460 |      |      |      |      |  |
| Val  | Ala  | Gln | Cys  | Ser  | Gln  | Lys  | Pro  | Cys  | Glu  | Asp  | Ser  | Cys  | Arg  | Ser  | Gly  |  |
| 2465 |      |     |      |      | 2470 |      |      |      |      | 2475 |      |      |      |      | 2480 |  |
| Phe  | Thr  | Tyr | Val  | Leu  | His  | Glu  | Gly  | Glu  | Cys  | Cys  | Gly  | Arg  | Cys  | Leu  | Pro  |  |
|      |      |     | 2485 |      |      |      |      | 2490 |      |      |      |      |      | 2495 |      |  |
| Ser  | Ala  | Cys | Glu  | Val  | Val  | Thr  | Gly  | Ser  | Pro  | Arg  | Gly  | Asp  | Ser  | Gln  | Ser  |  |
|      |      |     | 2500 |      |      |      |      | 2505 |      |      |      |      | 2510 |      |      |  |
| Ser  | Trp  | Lys | Ser  | Val  | Gly  | Ser  | Gln  | Trp  | Ala  | Ser  | Pro  | Glu  | Asn  | Pro  | Cys  |  |
|      | 2515 |     |      |      |      | 2520 |      |      |      |      |      | 2525 |      |      |      |  |
| Leu  | Ile  | Asn | Glu  | Cys  | Val  | Arg  | Val  | Lys  | Glu  | Glu  | Val  | Phe  | Ile  | Gln  | Gln  |  |
|      | 2530 |     |      |      | 2535 |      |      |      |      |      | 2540 |      |      |      |      |  |
| Arg  | Asn  | Val | Ser  | Cys  | Pro  | Gln  | Leu  | Glu  | Val  | Pro  | Val  | Cys  | Pro  | Ser  | Gly  |  |
| 2545 |      |     |      |      | 2550 |      |      |      |      | 2555 |      |      |      |      | 2560 |  |
| Phe  | Gln  | Leu | Ser  | Cys  | Lys  | Thr  | Ser  | Ala  | Cys  | Cys  | Pro  | Ser  | Cys  | Arg  | Cys  |  |
|      |      |     | 2565 |      |      |      |      | 2570 |      |      |      |      |      | 2575 |      |  |
| Glu  | Arg  | Met | Glu  | Ala  | Cys  | Met  | Leu  | Asn  | Gly  | Thr  | Val  | Ile  | Gly  | Pro  | Gly  |  |
|      |      |     | 2580 |      |      |      |      | 2585 |      |      |      |      | 2590 |      |      |  |
| Lys  | Thr  | Val | Met  | Ile  | Asp  | Val  | Cys  | Thr  | Thr  | Cys  | Arg  | Cys  | Met  | Val  | Gln  |  |
|      | 2595 |     |      |      |      | 2600 |      |      |      |      |      | 2605 |      |      |      |  |
| Val  | Gly  | Val | Ile  | Ser  | Gly  | Phe  | Lys  | Leu  | Glu  | Cys  | Arg  | Lys  | Thr  | Thr  | Cys  |  |
|      | 2610 |     |      |      | 2615 |      |      |      |      |      | 2620 |      |      |      |      |  |
| Asn  | Pro  | Cys | Pro  | Leu  | Gly  | Tyr  | Lys  | Glu  | Glu  | Asn  | Asn  | Thr  | Gly  | Glu  | Cys  |  |
| 2625 |      |     |      |      | 2630 |      |      |      |      | 2635 |      |      |      |      | 2640 |  |
| Cys  | Gly  | Arg | Cys  | Leu  | Pro  | Thr  | Ala  | Cys  | Thr  | Ile  | Gln  | Leu  | Arg  | Gly  | Gly  |  |
|      |      |     | 2645 |      |      |      |      | 2650 |      |      |      |      |      | 2655 |      |  |
| Gln  | Ile  | Met | Thr  | Leu  | Lys  | Arg  | Asp  | Glu  | Thr  | Leu  | Gln  | Asp  | Gly  | Cys  | Asp  |  |
|      |      |     | 2660 |      |      |      |      | 2665 |      |      |      |      | 2670 |      |      |  |
| Thr  | His  | Phe | Cys  | Lys  | Val  | Asn  | Glu  | Arg  | Gly  | Glu  | Tyr  | Phe  | Trp  | Glu  | Lys  |  |
|      | 2675 |     |      |      |      | 2680 |      |      |      |      |      | 2685 |      |      |      |  |
| Arg  | Val  | Thr | Gly  | Cys  | Pro  | Pro  | Phe  | Asp  | Glu  | His  | Lys  | Cys  | Leu  | Ala  | Glu  |  |
|      | 2690 |     |      |      | 2695 |      |      |      |      |      | 2700 |      |      |      |      |  |
| Gly  | Gly  | Lys | Ile  | Met  | Lys  | Ile  | Pro  | Gly  | Thr  | Cys  | Cys  | Asp  | Thr  | Cys  | Glu  |  |
| 2705 |      |     |      |      | 2710 |      |      |      |      | 2715 |      |      |      |      | 2720 |  |
| Glu  | Pro  | Glu | Cys  | Asn  | Asp  | Ile  | Thr  | Ala  | Arg  | Leu  | Gln  | Tyr  | Val  | Lys  | Val  |  |
|      |      |     | 2725 |      |      |      |      | 2730 |      |      |      |      |      | 2735 |      |  |
| Gly  | Ser  | Cys | Lys  | Ser  | Glu  | Val  | Glu  | Val  | Asp  | Ile  | His  | Tyr  | Cys  | Gln  | Gly  |  |
|      |      |     | 2740 |      |      |      |      | 2745 |      |      |      |      | 2750 |      |      |  |
| Lys  | Cys  | Ala | Ser  | Lys  | Ala  | Met  | Tyr  | Ser  | Ile  | Asp  | Ile  | Asn  | Asp  | Val  | Gln  |  |
|      | 2755 |     |      |      |      | 2760 |      |      |      |      | 2765 |      |      |      |      |  |
| Asp  | Gln  | Cys | Ser  | Cys  | Cys  | Ser  | Pro  | Thr  | Arg  | Thr  | Glu  | Pro  | Met  | Gln  | Val  |  |
|      | 2770 |     |      |      |      | 2775 |      |      |      |      | 2780 |      |      |      |      |  |

Ala Leu His Cys Thr Asn Gly Ser Val Val Tyr His Glu Val Leu Asn  
 2785 2790 2795 2800  
 Ala Met Glu Cys Lys Cys Ser Pro Arg Lys Cys Ser Lys  
 2805 2810

<210> 80  
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 <212> PRT  
 <213> Homo sapiens

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 Glu Leu Leu Val Gln Pro Lys Leu Leu Ala Lys Glu Leu Leu Asp Leu  
 35 40 45  
 Val Ala Ser His Phe Asn Leu Lys Glu Lys Glu Tyr Phe Gly Ile Ala  
 50 55 60  
 Phe Thr Asp Glu Thr Gly His Leu Asn Trp Leu Gln Leu Asp Arg Arg  
 65 70 75 80  
 Val Leu Glu His Asp Phe Pro Lys Lys Ser Gly Pro Val Val Leu Tyr  
 85 90 95  
 Phe Cys Val Arg Phe Tyr Ile Glu Ser Ile Ser Tyr Leu Lys Asp Asn  
 100 105 110  
 Ala Thr Ile Glu Leu Phe Phe Leu Asn Ala Lys Ser Cys Ile Tyr Lys  
 115 120 125  
 Glu Leu Ile Asp Val Asp Ser Glu Val Val Phe Glu Leu Ala Ser Tyr  
 130 135 140  
 Ile Leu Gln Glu Ala Lys Gly Asp Phe Ser Ser Asn Glu Val Val Arg  
 145 150 155 160  
 Ser Asp Leu Lys Lys Leu Pro Ala Leu Pro Thr Gln Ala Leu Lys Glu  
 165 170 175  
 His Pro Ser Leu Ala Tyr Cys Glu Asp Arg Val Ile Glu His Tyr Lys  
 180 185 190  
 Lys Leu Asn Gly Gln Thr Arg Gly Gln Ala Ile Val Asn Tyr Met Ser  
 195 200 205  
 Ile Val Glu Ser Leu Pro Thr Tyr Gly Val His Tyr Tyr Ala Val Lys  
 210 215 220  
 Asp Lys Gln Gly Ile Pro Trp Trp Leu Gly Leu Ser Tyr Lys Gly Ile  
 225 230 235 240  
 Phe Gln Tyr Asp Tyr His Asp Lys Val Lys Pro Arg Lys Ile Phe Gln  
 245 250 255  
 Trp Arg Gln Leu Glu Asn Leu Tyr Phe Arg Glu Lys Lys Phe Ser Val  
 260 265 270  
 Glu Val His Asp Pro Arg Arg Ala Ser Val Thr Arg Arg Thr Phe Gly  
 275 280 285  
 His Ser Gly Ile Ala Val His Thr Trp Tyr Ala Cys Pro Ala Leu Ile  
 290 295 300  
 Lys Ser Ile Trp Ala Met Ala Ile Ser Gln His Gln Phe Tyr Leu Asp  
 305 310 315 320  
 Arg Lys Gln Ser Lys Ser Lys Ile His Ala Ala Arg Ser Leu Ser Glu  
 325 330 335  
 Ile Ala Ile Asp Leu Thr Glu Thr Gly Thr Leu Lys Thr Ser Lys Leu  
 340 345 350  
 Ala Asn Met Gly Ser Lys Gly Lys Ile Ile Ser Gly Ser Ser Gly Ser  
 355 360 365  
 Leu Leu Ser Ser Gly Ser Gln Glu Ser Asp Ser Ser Gln Ser Ala Lys  
 370 375 380  
 Lys Asp Met Leu Ala Ala Leu Lys Ser Arg Gln Glu Ala Leu Glu Glu  
 385 390 395 400

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Leu | Arg | Gln | Arg | Leu | Glu | Glu | Leu | Lys | Lys | Leu | Cys | Leu | Arg | Glu |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Ala | Glu | Leu | Thr | Gly | Lys | Leu | Pro | Val | Glu | Tyr | Pro | Leu | Asp | Pro | Gly |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Glu | Glu | Pro | Pro | Ile | Val | Arg | Arg | Arg | Ile | Gly | Thr | Ala | Phe | Lys | Leu |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Asp | Glu | Gln | Lys | Ile | Leu | Pro | Lys | Gly | Glu | Glu | Ala | Glu | Leu | Glu | Arg |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |
| Leu | Glu | Arg | Glu | Phe | Ala | Ile | Gln | Ser | Gln | Ile | Thr | Glu | Ala | Ala | Arg |
| 465 |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     |     | 480 |
| Arg | Leu | Ala | Ser | Asp | Pro | Asn | Val | Ser | Lys | Lys | Leu | Lys | Lys | Gln | Arg |
|     |     |     | 485 |     |     |     |     |     | 490 |     |     |     |     | 495 |     |
| Lys | Thr | Ser | Tyr | Leu | Asn | Ala | Leu | Lys | Lys | Leu | Gln | Glu | Ile | Glu | Asn |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |
| Ala | Ile | Asn | Glu | Asn | Arg | Ile | Lys | Ser | Gly | Lys | Lys | Pro | Thr | Gln | Arg |
|     | 515 |     |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |
| Ala | Ser | Leu | Ile | Ile | Asp | Asp | Gly | Asn | Ile | Ala | Ser | Glu | Asp | Ser | Ser |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |
| Leu | Ser | Asp | Ala | Leu | Val | Leu | Glu | Asp | Glu | Asp | Ser | Gln | Val | Thr | Ser |
| 545 |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     |     | 560 |
| Thr | Ile | Ser | Pro | Leu | His | Ser | Pro | His | Lys | Gly | Leu | Pro | Pro | Arg | Pro |
|     |     |     | 565 |     |     |     |     |     | 570 |     |     |     |     | 575 |     |
| Pro | Ser | His | Asn | Arg | Pro | Pro | Pro | Pro | Gln | Ser | Leu | Glu | Gly | Leu | Arg |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |
| Gln | Met | His | Tyr | His | Arg | Asn | Asp | Tyr | Asp | Lys | Ser | Pro | Ile | Lys | Pro |
|     | 595 |     |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |
| Lys | Met | Trp | Ser | Glu | Ser | Ser | Leu | Asp | Glu | Pro | Tyr | Glu | Lys | Val | Lys |
|     | 610 |     |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |
| Lys | Arg | Ser | Ser | His | Ser | His | Ser | Ser | Ser | His | Lys | Arg | Phe | Pro | Ser |
| 625 |     |     |     | 630 |     |     |     |     |     | 635 |     |     |     | 640 |     |
| Thr | Gly | Ser | Cys | Ala | Glu | Ala | Gly | Gly | Gly | Ser | Asn | Ser | Leu | Gln | Asn |
|     |     |     | 645 |     |     |     |     | 650 |     |     |     |     |     | 655 |     |
| Ser | Pro | Ile | Arg | Gly | Leu | Pro | His | Trp | Asn | Ser | Gln | Ser | Ser | Met | Pro |
|     |     |     | 660 |     |     |     |     | 665 |     |     |     |     | 670 |     |     |
| Ser | Thr | Pro | Asp | Leu | Arg | Val | Arg | Ser | Pro | His | Tyr | Val | His | Ser | Thr |
|     | 675 |     |     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |
| Arg | Ser | Val | Asp | Ile | Ser | Pro | Thr | Arg | Leu | His | Ser | Leu | Ala | Leu | His |
|     | 690 |     |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     |
| Phe | Arg | His | Arg | Ser | Ser | Ser | Leu | Glu | Ser | Gln | Gly | Lys | Leu | Leu | Gly |
| 705 |     |     |     | 710 |     |     |     |     |     | 715 |     |     |     | 720 |     |
| Ser | Glu | Asn | Asp | Thr | Gly | Ser | Pro | Asp | Phe | Tyr | Thr | Pro | Arg | Thr | Arg |
|     |     |     | 725 |     |     |     |     | 730 |     |     |     |     |     | 735 |     |
| Ser | Ser | Asn | Gly | Ser | Asp | Pro | Met | Asp | Asp | Cys | Ser | Ser | Cys | Thr | Ser |
|     |     | 740 |     |     |     |     |     | 745 |     |     |     | 750 |     |     |     |
| His | Ser | Ser | Ser | Glu |     |     |     |     |     |     |     |     |     |     |     |

Glu Ser Trp Arg Gly Gly Gly Gly Asp Glu Gly Asp Thr Gly Arg Leu  
 885 890 895  
 Thr Pro Ser Arg Ser Gln Ile Leu Arg Thr Pro Ser Leu Gly Arg Glu  
 900 905 910  
 Gly Ala His Asp Lys Gly Ala Gly Arg Ala Ala Val Ser Asp Glu Leu  
 915 920 925  
 Arg Gln Trp Tyr Gln Arg Ser Thr Ala Ser His Lys Glu His Ser Arg  
 930 935 940  
 Leu Ser His Thr Ser Ser Thr Ser Ser Asp Ser Gly Ser Gln Tyr Ser  
 945 950 955 960  
 Thr Ser Ser Gln Ser Thr Phe Val Ala His Ser Arg Val Thr Arg Met  
 965 970 975  
 Pro Gln Met Cys Lys Ala Thr Ser Ala Ala Leu Pro Gln Ser Gln Arg  
 980 985 990  
 Ser Ser Thr Pro Ser Ser Glu Ile Gly Ala Thr Pro Pro Ser Ser Pro  
 995 1000 1005  
 His His Ile Leu Thr Trp Gln Thr Gly Glu Ala Thr Glu Asn Ser Pro  
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 Ile Leu Asp Gly Ser Glu Ser Pro Pro His Gln Ser Thr Asp Glu  
 1025 1030 1035

<210> 81  
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 <212> PRT  
 <213> Homo sapiens

<400> 81  
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 Thr Val Leu Cys Ala Lys Asn Leu Val Lys Lys Asp Phe Phe Arg Leu  
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 Pro Asp Pro Phe Ala Lys Val Val Asp Gly Ser Gly Gln Cys His  
 35 40 45  
 Ser Thr Asp Thr Val Lys Asn Thr Leu Asp Pro Lys Trp Asn Gln His  
 50 55 60  
 Tyr Asp Leu Tyr Ile Gly Lys Ser Asp Ser Val Thr Ile Ser Val Trp  
 65 70 75 80  
 Asn His Lys Lys Ile His Lys Lys Gln Gly Ala Gly Phe Leu Gly Cys  
 85 90 95  
 Val Arg Leu Leu Ser Asn Ala Ile Asn Arg Leu Lys Asp Thr Gly Tyr  
 100 105 110  
 Gln Arg Leu Asp Leu Cys Lys Leu Gly Pro Asn Asp Asn Asp Thr Val  
 115 120 125  
 Arg Gly Gln Ile Val Val Ser Leu Gln Ser Arg Asp Arg Ile Gly Thr  
 130 135 140  
 Gly Gly Gln Val Val Asp Cys Ser Arg Leu Phe Asp Asn Asp Leu Pro  
 145 150 155 160  
 Asp Gly Trp Glu Glu Arg Arg Thr Ala Ser Gly Arg Ile Gln Tyr Leu  
 165 170 175  
 Asn His Ile Thr Arg Thr Thr Gln Trp Glu Arg Pro Thr Arg Pro Ala  
 180 185 190  
 Ser Glu Tyr Ser Ser Pro Gly Arg Pro Leu Ser Cys Phe Val Asp Glu  
 195 200 205  
 Asn Thr Pro Ile Ser Gly Thr Asn Gly Ala Thr Cys Gly Gln Ser Ser  
 210 215 220  
 Asp Pro Arg Leu Ala Glu Arg Arg Val Arg Ser Gln Arg His Arg Asn  
 225 230 235 240  
 Tyr Met Ser Arg Thr His Leu His Thr Pro Pro Asp Leu Pro Glu Gly  
 245 250 255  
 Tyr Glu Gln Arg Thr Thr Gln Gln Gly Gln Val Tyr Phe Leu His Thr  
 260 265 270



10021660 120601

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Thr | Gly | Val | Ser | Thr | Trp | His | Asp | Pro | Arg | Val | Pro | Arg | Asp | Leu |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Ser | Asn | Ile | Asn | Cys | Glu | Glu | Leu | Gly | Pro | Leu | Pro | Pro | Gly | Trp | Glu |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Ile | Arg | Asn | Thr | Ala | Thr | Gly | Arg | Val | Tyr | Phe | Val | Asp | His | Asn | Asn |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |
| Arg | Thr | Thr | Gln | Phe | Thr | Asp | Pro | Arg | Leu | Ser | Ala | Asn | Leu | His | Leu |
|     |     |     | 325 |     |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Val | Leu | Asn | Arg | Gln | Asn | Gln | Leu | Lys | Asp | Gln | Gln | Gln | Gln | Gln | Val |
|     |     | 340 |     |     |     |     |     | 345 |     |     |     | 350 |     |     |     |
| Val | Ser | Leu | Cys | Pro | Asp | Asp | Thr | Glu | Cys | Leu | Thr | Val | Pro | Arg | Tyr |
|     | 355 |     |     |     |     | 360 |     |     |     |     |     | 365 |     |     |     |
| Lys | Arg | Asp | Leu | Val | Gln | Lys | Leu | Lys | Ile | Leu | Arg | Gln | Glu | Leu | Ser |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Gln | Gln | Gln | Pro | Gln | Ala | Gly | His | Cys | Arg | Ile | Glu | Val | Ser | Arg | Glu |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Glu | Ile | Phe | Glu | Glu | Ser | Tyr | Arg | Gln | Val | Met | Lys | Met | Arg | Pro | Lys |
|     |     |     | 405 |     |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Asp | Leu | Trp | Lys | Arg | Leu | Met | Ile | Lys | Phe | Arg | Gly | Glu | Glu | Gly | Leu |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Asp | Tyr | Gly | Gly | Val | Ala | Arg | Glu | Trp | Leu | Tyr | Leu | Leu | Ser | His | Glu |
|     | 435 |     |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Met | Leu | Asn | Pro | Tyr | Tyr | Gly | Leu | Phe | Gln | Tyr | Ser | Arg | Asp | Asp | Ile |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |
| Tyr | Thr | Leu | Gln | Ile | Asn | Pro | Asp | Ser | Ala | Val | Asn | Pro | Glu | His | Leu |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |
| Ser | Tyr | Phe | His | Phe | Val | Gly | Arg | Ile | Met | Gly | Met | Ala | Val | Phe | His |
|     |     |     | 485 |     |     |     |     |     | 490 |     |     |     |     | 495 |     |
| Gly | His | Tyr | Ile | Asp | Gly | Gly | Phe | Thr | Leu | Pro | Phe | Tyr | Lys | Gln | Leu |
|     |     | 500 |     |     |     |     |     | 505 |     |     |     |     | 510 |     |     |
| Leu | Gly | Lys | Ser | Ile | Thr | Leu | Asp | Met | Glu | Leu | Val | Asp | Pro | Asp |     |
|     | 515 |     |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |
| Leu | His | Asn | Ser | Leu | Val | Trp | Ile | Leu | Glu | Asn | Asp | Ile | Thr | Gly | Val |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |
| Leu | Asp | His | Thr | Phe | Cys | Val | Glu | His | Asn | Ala | Tyr | Gly | Glu | Ile | Ile |
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |
| Gln | His | Glu | Leu | Lys | Pro | Asn | Gly | Lys | Ser | Ile | Pro | Val | Asn | Glu | Glu |
|     |     |     | 565 |     |     |     |     |     | 570 |     |     |     |     | 575 |     |
| Asn | Lys | Lys | Glu | Tyr | Val | Arg | Leu | Tyr | Val | Asn | Trp | Arg | Phe | Leu | Arg |
|     |     | 580 |     |     |     |     |     | 585 |     |     |     |     | 590 |     |     |
| Gly | Ile | Glu | Ala | Gln | Phe | Leu | Ala | Leu | Gln | Lys | Gly | Phe | Asn | Glu | Val |
|     | 595 |     |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |
| Ile | Pro | Gln | His | Leu | Leu | Lys | Thr | Phe | Asp | Glu | Lys | Glu | Leu | Glu | Leu |
|     | 610 |     |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |
| Ile | Ile | Cys | Gly | Leu | Gly | Lys | Ile | Asp | Val | Asn | Asp | Trp | Lys | Val | Asn |
| 625 |     |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     | 640 |
| Thr | Arg | Leu | Lys | His | Cys | Thr | Pro | Asp | Ser | Asn | Ile | Val | Lys | Trp | Phe |
|     |     |     | 645 |     |     |     |     |     | 650 |     |     |     |     | 655 |     |
| Trp | Lys | Ala | Val | Glu | Phe | Phe | Asp | Glu | Glu | Arg | Arg | Ala | Arg | Leu | Leu |
|     |     | 660 |     |     |     |     |     | 665 |     |     |     |     | 670 |     |     |
| Gln | Phe | Val | Thr | Gly | Ser | Ser | Arg | Val | Pro | Leu | Gln | Gly | Phe | Lys | Ala |
|     | 675 |     |     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |
| Leu | Gln | Gly | Ala | Ala | Gly | Pro | Arg | Leu | Phe | Thr | Ile | His | Gln | Ile | Asp |
|     | 690 |     |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     |
| Ala | Cys | Thr | Asn | Asn | Leu | Pro | Lys | Ala | His | Thr | Cys | Phe | Asn | Arg | Ile |
| 705 |     |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     | 720 |
| Asp | Ile | Pro | Pro | Tyr | Glu | Ser | Tyr | Glu | Lys | Leu | Tyr | Glu | Lys | Leu | Leu |
|     |     |     | 725 |     |     |     |     |     | 730 |     |     |     |     | 735 |     |
| Thr | Ala | Ile | Glu | Glu | Thr | Cys | Gly | Phe | Ala | Val | Glu |     |     |     |     |
|     |     |     | 740 |     |     |     |     | 745 |     |     |     |     |     |     |     |

<210> 82  
 <211> 199  
 <212> PRT  
 <213> Homo sapiens

<400> 82  
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 Pro Ala Asp Arg Gly Pro Ala Glu Pro Cys Ser Cys Ala Gly Val Ile  
 20 25 30  
 Leu Gly Phe Leu Leu Phe Arg Gly His Asn Ser Gln Pro Thr Met Thr  
 35 40 45  
 Gln Thr Ser Ser Ser Gln Gly Gly Leu Gly Gly Leu Ser Leu Thr Thr  
 50 55 60  
 Glu Pro Val Ser Ser Asn Pro Gly Tyr Ile Pro Ser Ser Glu Ala Asn  
 65 70 75 80  
 Arg Pro Ser His Leu Ser Ser Thr Gly Thr Pro Gly Ala Gly Val Pro  
 85 90 95  
 Ser Ser Gly Arg Asp Gly Gly Thr Ser Arg Asp Thr Phe Gln Thr Val  
 100 105 110  
 Pro Pro Asn Ser Thr Thr Met Ser Leu Ser Met Arg Glu Asp Ala Thr  
 115 120 125  
 Ile Leu Pro Ser Pro Thr Ser Glu Thr Val Leu Thr Val Ala Ala Phe  
 130 135 140  
 Gly Val Ile Ser Phe Ile Val Ile Leu Val Val Val Val Ile Ile Leu  
 145 150 155 160  
 Val Gly Val Val Ser Leu Arg Phe Lys Cys Arg Lys Ser Lys Glu Ser  
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 Gly Asp Pro Gln Lys Pro Gly Glu Arg Glu Glu Lys Val Gly His Arg  
 180 185 190  
 Arg Glu Pro Tyr Pro Trp Asn  
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<210> 83  
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 <212> PRT  
 <213> Homo sapiens

<400> 83  
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 Gly Thr Ala Cys Tyr Thr Ala His Ser Gly Lys Leu Ser Ala Ala Glu  
 35 40 45  
 Ala Gln Asn His Cys Asn Gln Asn Gly Gly Asn Leu Ala Thr Val Lys  
 50 55 60  
 Ser Lys Glu Glu Ala Gln His Val Gln Arg Val Leu Ala Gln Leu Leu  
 65 70 75 80  
 Arg Arg Glu Ala Ala Leu Thr Ala Arg Met Ser Lys Phe Trp Ile Gly  
 85 90 95  
 Leu Gln Arg Glu Lys Gly Lys Cys Leu Asp Pro Ser Leu Pro Leu Lys  
 100 105 110  
 Gly Phe Ser Trp Val Gly Gly Gly Glu Asp Thr Pro Tyr Ser Asn Trp  
 115 120 125  
 His Lys Glu Leu Arg Asn Ser Cys Ile Ser Lys Arg Cys Val Ser Leu  
 130 135 140  
 Leu Leu Asp Leu Ser Gln Pro Leu Leu Pro Asn Arg Leu Pro Lys Trp  
 145 150 155 160  
 Ser Glu Gly Pro Cys Gly Ser Pro Gly Ser Pro Gly Ser Asn Ile Glu  
 165 170 175

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|
| Gly | Phe | Val | Cys | Lys | Phe | Ser | Phe | Lys | Gly | Met | Cys | Arg | Pro | Leu | Ala |  |  |  |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |  |  |  |
| Leu | Gly | Gly | Pro | Gly | Gln | Val | Thr | Tyr | Thr | Thr | Pro | Phe | Gln | Thr | Thr |  |  |  |
|     |     |     | 195 |     |     |     | 200 |     |     |     |     | 205 |     |     |     |  |  |  |
| Ser | Ser | Ser | Leu | Glu | Ala | Val | Pro | Phe | Ala | Ser | Ala | Ala | Asn | Val | Ala |  |  |  |
|     |     |     | 210 |     |     | 215 |     |     |     |     | 220 |     |     |     |     |  |  |  |
| Cys | Gly | Glu | Gly | Asp | Lys | Asp | Glu | Thr | Gln | Ser | His | Tyr | Phe | Leu | Cys |  |  |  |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |  |  |
| Lys | Glu | Lys | Ala | Pro | Asp | Val | Phe | Asp | Trp | Gly | Ser | Ser | Gly | Pro | Leu |  |  |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |  |  |  |
| Cys | Val | Ser | Pro | Lys | Tyr | Gly | Cys | Asn | Phe | Asn | Asn | Gly | Gly | Cys | His |  |  |  |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |  |  |  |
| Gln | Asp | Cys | Phe | Glu | Gly | Gly | Asp | Gly | Ser | Phe | Leu | Cys | Gly | Cys | Arg |  |  |  |
|     |     |     | 275 |     |     |     | 280 |     |     |     |     | 285 |     |     |     |  |  |  |
| Pro | Gly | Phe | Arg | Leu | Leu | Asp | Asp | Leu | Val | Thr | Cys | Ala | Ser | Arg | Asn |  |  |  |
|     |     |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |  |  |  |
| Pro | Cys | Ser | Ser | Ser | Pro | Cys | Arg | Gly | Gly | Ala | Thr | Cys | Val | Leu | Gly |  |  |  |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |  |  |  |
| Pro | His | Gly | Lys | Asn | Tyr | Thr | Cys | Arg | Cys | Pro | Gln | Gly | Tyr | Gln | Leu |  |  |  |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |  |  |  |
| Asp | Ser | Ser | Gln | Leu | Asp | Cys | Val | Asp | Val | Asp | Glu | Cys | Gln | Asp | Ser |  |  |  |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |  |  |  |
| Pro | Cys | Ala | Gln | Glu | Cys | Val | Asn | Thr | Pro | Gly | Gly | Phe | Arg | Cys | Glu |  |  |  |
|     |     |     | 355 |     |     |     | 360 |     |     |     |     | 365 |     |     |     |  |  |  |
| Cys | Trp | Val | Gly | Tyr | Glu | Pro | Gly | Gly | Pro | Gly | Glu | Gly | Ala | Cys | Gln |  |  |  |
|     |     |     | 370 |     |     | 375 |     |     |     |     | 380 |     |     |     |     |  |  |  |
| Asp | Val | Asp | Glu | Cys | Ala | Leu | Gly | Arg | Ser | Pro | Cys | Ala | Gln | Gly | Cys |  |  |  |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |  |  |  |
| Thr | Asn | Thr | Asp | Gly | Ser | Phe | His | Cys | Ser | Cys | Glu | Glu | Gly | Tyr | Val |  |  |  |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |  |  |  |
| Leu | Ala | Gly | Glu | Asp | Gly | Thr | Gln | Cys | Gln | Asp | Val | Asp | Glu | Cys | Val |  |  |  |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |  |  |  |
| Gly | Pro | Gly | Gly | Pro | Leu | Cys | Asp | Ser | Leu | Cys | Phe | Asn | Thr | Gln | Gly |  |  |  |
|     |     |     | 435 |     |     |     | 440 |     |     |     |     | 445 |     |     |     |  |  |  |
| Ser | Phe | His | Cys | Gly | Cys | Leu | Pro | Gly | Trp | Val | Leu | Ala | Pro | Asn | Gly |  |  |  |
|     |     |     | 450 |     |     | 455 |     |     |     |     | 460 |     |     |     |     |  |  |  |
| Val | Ser | Cys | Thr | Met | Gly | Pro | Val | Ser | Leu | Gly | Pro | Pro | Ser | Gly | Pro |  |  |  |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |  |  |  |
| Pro | Asp | Glu | Glu | Asp | Lys | Gly | Glu | Lys | Glu | Gly | Ser | Thr | Val | Pro | Arg |  |  |  |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |  |  |  |
| Ala | Ala | Thr | Ala | Ser | Pro | Thr | Arg | Gly | Pro | Glu | Gly | Thr | Pro | Lys | Ala |  |  |  |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |  |  |  |
| Thr | Pro | Thr | Thr | Ser | Arg | Pro | Ser | Leu | Ser | Ser | Asp | Ala | Pro | Ile | Thr |  |  |  |
|     |     |     | 515 |     |     |     | 520 |     |     |     |     | 525 |     |     |     |  |  |  |
| Ser | Ala | Pro | Leu | Lys | Met | Leu | Ala | Pro | Ser | Gly | Ser | Ser | Gly | Val | Trp |  |  |  |
|     |     |     | 530 |     |     | 535 |     |     |     |     | 540 |     |     |     |     |  |  |  |
| Arg | Glu | Pro | Ser | Ile | His | His | Ala | Thr | Ala | Ala | Ser | Gly | Pro | Gln | Glu |  |  |  |
| 545 |     |     |     |     | 550 |     |     |     | 555 |     |     |     |     |     | 560 |  |  |  |
| Pro | Ala | Gly | Gly | Asp | Ser | Ser | Val | Ala | Thr | Gln | Asn | Asn | Asp | Gly | Thr |  |  |  |
|     |     |     |     | 565 |     |     |     |     | 570 |     |     |     |     | 575 |     |  |  |  |
| Asp | Gly | Gln | Lys | Leu | Leu | Leu | Phe | Tyr | Ile | Leu | Gly | Thr | Val | Val | Ala |  |  |  |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |  |  |  |
| Ile | Leu | Leu | Leu | Leu | Ala | Leu | Ala | Leu | Gly | Leu | Leu | Val | Tyr | Arg | Lys |  |  |  |
|     |     |     | 595 |     |     |     | 600 |     |     |     |     | 605 |     |     |     |  |  |  |
| Arg | Arg | Ala | Lys | Arg | Glu | Glu | Lys | Lys | Glu | Lys | Lys | Pro | Gln | Asn | Ala |  |  |  |
|     |     |     | 610 |     |     | 615 |     |     |     |     | 620 |     |     |     |     |  |  |  |
| Ala | Asp | Ser | Tyr | Ser | Trp | Val | Pro | Glu | Arg | Ala | Glu | Ser | Arg | Ala | Met |  |  |  |
| 625 |     |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     | 640 |  |  |  |
| Glu | Asn | Gln | Tyr | Ser | Pro | Thr | Pro | Gly | Thr | Asp | Cys |     |     |     |     |  |  |  |
|     |     |     |     | 645 |     |     |     |     | 650 |     |     |     |     |     |     |  |  |  |

<210> 84  
 <211> 1338  
 <212> PRT  
 <213> Homo sapiens

<400> 84

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Val | Ser | Tyr | Trp | Asp | Thr | Gly | Val | Leu | Leu | Cys | Ala | Leu | Leu | Ser |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |
| Cys | Leu | Leu | Leu | Thr | Gly | Ser | Ser | Ser | Gly | Ser | Lys | Leu | Lys | Asp | Pro |
|     |     |     | 20  |     |     |     | 25  |     |     |     |     |     | 30  |     |     |
| Glu | Leu | Ser | Leu | Lys | Gly | Thr | Gln | His | Ile | Met | Gln | Ala | Gly | Gln | Thr |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Leu | His | Leu | Gln | Cys | Arg | Gly | Glu | Ala | Ala | His | Lys | Trp | Ser | Leu | Pro |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Glu | Met | Val | Ser | Lys | Glu | Ser | Glu | Arg | Leu | Ser | Ile | Thr | Lys | Ser | Ala |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |
| Cys | Gly | Arg | Asn | Gly | Lys | Gln | Phe | Cys | Ser | Thr | Leu | Thr | Leu | Asn | Thr |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Ala | Gln | Ala | Asn | His | Thr | Gly | Phe | Tyr | Ser | Cys | Lys | Tyr | Leu | Ala | Val |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Pro | Thr | Ser | Lys | Lys | Lys | Glu | Thr | Glu | Ser | Ala | Ile | Tyr | Ile | Phe | Ile |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Ser | Asp | Thr | Gly | Arg | Pro | Phe | Val | Glu | Met | Tyr | Ser | Glu | Ile | Pro | Glu |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Ile | Ile | His | Met | Thr | Glu | Gly | Arg | Glu | Leu | Val | Ile | Pro | Cys | Arg | Val |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
| Thr | Ser | Pro | Asn | Ile | Thr | Val | Thr | Leu | Lys | Lys | Phe | Pro | Leu | Asp | Thr |
|     |     |     | 165 |     |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Leu | Ile | Pro | Asp | Gly | Lys | Arg | Ile | Ile | Trp | Asp | Ser | Arg | Lys | Gly | Phe |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Ile | Ile | Ser | Asn | Ala | Thr | Tyr | Lys | Glu | Ile | Gly | Leu | Leu | Thr | Cys | Glu |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Ala | Thr | Val | Asn | Gly | His | Leu | Tyr | Lys | Thr | Asn | Tyr | Leu | Thr | His | Arg |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Gln | Thr | Asn | Thr | Ile | Ile | Asp | Val | Gln | Ile | Ser | Thr | Pro | Arg | Pro | Val |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Lys | Leu | Leu | Arg | Gly | His | Thr | Leu | Val | Leu | Asn | Cys | Thr | Ala | Thr | Thr |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Pro | Leu | Asn | Thr | Arg | Val | Gln | Met | Thr | Trp | Ser | Tyr | Pro | Asp | Glu | Lys |
|     |     | 260 |     |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Asn | Lys | Arg | Ala | Ser | Val | Arg | Arg | Arg | Ile | Asp | Gln | Ser | Asn | Ser | His |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Ala | Asn | Ile | Phe | Tyr | Ser | Val | Leu | Thr | Ile | Asp | Lys | Met | Gln | Asn | Lys |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Asp | Lys | Gly | Leu | Tyr | Thr | Cys | Arg | Val | Arg | Ser | Gly | Pro | Ser | Phe | Lys |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |
| Ser | Val | Asn | Thr | Ser | Val | His | Ile | Tyr | Asp | Lys | Ala | Phe | Ile | Thr | Val |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Lys | His | Arg | Lys | Gln | Gln | Val | Leu | Glu | Thr | Val | Ala | Gly | Lys | Arg | Ser |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Tyr | Arg | Leu | Ser | Met | Lys | Val | Lys | Ala | Phe | Pro | Ser | Pro | Glu | Val | Val |
|     | 355 |     |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Trp | Leu | Lys | Asp | Gly | Leu | Pro | Ala | Thr | Glu | Lys | Ser | Ala | Arg | Tyr | Leu |
|     | 370 |     |     |     |     | 375 |     |     |     |     |     | 380 |     |     |     |
| Thr | Arg | Gly | Tyr | Ser | Leu | Ile | Ile | Lys | Asp | Val | Thr | Glu | Glu | Asp | Ala |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Gly | Asn | Tyr | Thr | Ile | Leu | Leu | Ser | Ile | Lys | Gln | Ser | Asn | Val | Phe | Lys |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Asn | Leu | Thr | Ala | Thr | Leu | Ile | Val | Asn | Val | Lys | Pro | Gln | Ile | Tyr | Glu |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Ala | Val | Ser | Ser | Phe | Pro | Asp | Pro | Ala | Leu | Tyr | Pro | Leu | Gly | Ser | 435 | 440 | 445 |
| Arg | Gln | Ile | Leu | Thr | Cys | Thr | Ala | Tyr | Gly | Ile | Pro | Gln | Pro | Thr | Ile | 450 | 455 | 460 |
| Lys | Trp | Phe | Trp | His | Pro | Cys | Asn | His | Asn | His | Ser | Glu | Ala | Arg | Cys | 465 | 470 | 475 |
| Asp | Phe | Cys | Ser | Asn | Asn | Glu | Glu | Ser | Phe | Ile | Leu | Asp | Ala | Asp | Ser | 485 | 490 | 495 |
| Asn | Met | Gly | Asn | Arg | Ile | Glu | Ser | Ile | Thr | Gln | Arg | Met | Ala | Ile | Ile | 500 | 505 | 510 |
| Glu | Gly | Lys | Asn | Lys | Met | Ala | Ser | Thr | Leu | Val | Val | Ala | Asp | Ser | Arg | 515 | 520 | 525 |
| Ile | Ser | Gly | Ile | Tyr | Ile | Cys | Ile | Ala | Ser | Asn | Lys | Val | Gly | Thr | Val | 530 | 535 | 540 |
| Gly | Arg | Asn | Ile | Ser | Phe | Tyr | Ile | Thr | Asp | Val | Pro | Asn | Gly | Phe | His | 545 | 550 | 555 |
| Val | Asn | Leu | Glu | Lys | Met | Pro | Thr | Glu | Gly | Glu | Asp | Leu | Lys | Leu | Ser | 565 | 570 | 575 |
| Cys | Thr | Val | Asn | Lys | Phe | Leu | Tyr | Arg | Asp | Val | Thr | Trp | Ile | Leu | Leu | 580 | 585 | 590 |
| Arg | Thr | Val | Asn | Asn | Arg | Thr | Met | His | Tyr | Ser | Ile | Ser | Lys | Gln | Lys | 595 | 600 | 605 |
| Met | Ala | Ile | Thr | Lys | Glu | His | Ser | Ile | Thr | Leu | Asn | Leu | Thr | Ile | Met | 610 | 615 | 620 |
| Asn | Val | Ser | Leu | Gln | Asp | Ser | Gly | Thr | Tyr | Ala | Cys | Arg | Ala | Arg | Asn | 625 | 630 | 635 |
| Val | Tyr | Thr | Gly | Glu | Glu | Ile | Leu | Gln | Lys | Lys | Glu | Ile | Thr | Ile | Arg | 645 | 650 | 655 |
| Asp | Gln | Glu | Ala | Pro | Tyr | Leu | Leu | Arg | Asn | Leu | Ser | Asp | His | Thr | Val | 660 | 665 | 670 |
| Ala | Ile | Ser | Ser | Ser | Thr | Thr | Leu | Asp | Cys | His | Ala | Asn | Gly | Val | Pro | 675 | 680 | 685 |
| Glu | Pro | Gln | Ile | Thr | Trp | Phe | Lys | Asn | Asn | His | Lys | Ile | Gln | Gln | Glu | 690 | 695 | 700 |
| Pro | Gly | Ile | Ile | Leu | Gly | Pro | Gly | Ser | Ser | Thr | Leu | Phe | Ile | Glu | Arg | 705 | 710 | 715 |
| Val | Thr | Glu | Glu | Asp | Glu | Gly | Val | Tyr | His | Cys | Lys | Ala | Thr | Asn | Gln | 725 | 730 | 735 |
| Lys | Gly | Ser | Val | Glu | Ser | Ser | Ala | Tyr | Leu | Thr | Val | Gln | Gly | Thr | Ser | 740 | 745 | 750 |
| Asp | Lys | Ser | Asn | Leu | Glu | Leu | Ile | Thr | Leu | Thr | Cys | Thr | Cys | Val | Ala | 755 | 760 | 765 |
| Ala | Thr | Leu | Phe | Trp | Leu | Leu | Thr | Leu | Leu | Ile | Arg | Lys | Met | Lys |     | 770 | 775 | 780 |
| Arg | Ser | Ser | Ser | Glu | Ile | Lys | Thr | Asp | Tyr | Leu | Ser | Ile | Ile | Met | Asp | 785 | 790 | 795 |
| Pro | Asp | Glu | Val | Pro | Leu | Asp | Glu | Gln | Cys | Glu | Arg | Leu | Pro | Tyr | Asp | 805 | 810 | 815 |
| Ala | Ser | Lys | Trp | Glu | Phe | Ala | Arg | Glu | Arg | Leu | Lys | Leu | Gly | Lys | Ser | 820 | 825 | 830 |
| Leu | Gly | Arg | Gly | Ala | Phe | Gly | Lys | Val | Val | Gln | Ala | Ser | Ala | Phe | Gly | 835 | 840 | 845 |
| Ile | Lys | Lys | Ser | Pro | Thr | Cys | Arg | Thr | Val | Ala | Val | Lys | Met | Leu | Lys | 850 | 855 | 860 |
| Glu | Gly | Ala | Thr | Ala | Ser | Glu | Tyr | Lys | Ala | Leu | Met | Thr | Glu | Leu | Lys | 865 | 870 | 875 |
| Ile | Leu | Thr | His | Ile | Gly | His | His | Leu | Asn | Val | Val | Asn | Leu | Leu | Gly | 885 | 890 | 895 |
| Ala | Cys | Thr | Lys | Gln | Gly | Gly | Pro | Leu | Met | Val | Ile | Val | Glu | Tyr | Cys | 900 | 905 | 910 |

Lys Tyr Gly Asn Leu Ser Asn Tyr Leu Lys Ser Lys Arg Asp Leu Phe  
           915                                  920                  925  
 Phe Leu Asn Lys Asp Ala Ala Leu His Met Glu Pro Lys Lys Glu Lys  
           930                                  935                  940  
 Met Glu Pro Gly Leu Glu Gln Gly Lys Lys Pro Arg Leu Asp Ser Val  
 945                                  950                  955                  960  
 Thr Ser Ser Glu Ser Phe Ala Ser Ser Gly Phe Gln Glu Asp Lys Ser  
                                   965                  970                  975  
 Leu Ser Asp Val Glu Glu Glu Glu Asp Ser Asp Gly Phe Tyr Lys Glu  
                                   980                  985                  990  
 Pro Ile Thr Met Glu Asp Leu Ile Ser Tyr Ser Phe Gln Val Ala Arg  
                                   995                  1000                  1005  
 Gly Met Glu Phe Leu Ser Ser Arg Lys Cys Ile His Arg Asp Leu Ala  
           1010                                  1015                  1020  
 Ala Arg Asn Ile Leu Leu Ser Glu Asn Asn Val Val Lys Ile Cys Asp  
 1025                                  1030                  1035                  1040  
 Phe Gly Leu Ala Arg Asp Ile Tyr Lys Asn Pro Asp Tyr Val Arg Lys  
                                   1045                  1050                  1055  
 Gly Asp Thr Arg Leu Pro Leu Lys Trp Met Ala Pro Glu Ser Ile Phe  
                                   1060                  1065                  1070  
 Asp Lys Ile Tyr Ser Thr Lys Ser Asp Val Trp Ser Tyr Gly Val Leu  
           1075                                  1080                  1085  
 Leu Trp Glu Ile Phe Ser Leu Gly Gly Ser Pro Tyr Pro Gly Val Gln  
           1090                                  1095                  1100  
 Met Asp Glu Asp Phe Cys Ser Arg Leu Arg Glu Gly Met Arg Met Arg  
 1105                                  1110                  1115                  1120  
 Ala Pro Glu Tyr Ser Thr Pro Glu Ile Tyr Gln Ile Met Leu Asp Cys  
                                   1125                  1130                  1135  
 Trp His Arg Asp Pro Lys Glu Arg Pro Arg Phe Ala Glu Leu Val Glu  
                                   1140                  1145                  1150  
 Lys Leu Gly Asp Leu Leu Gln Ala Asn Val Gln Gln Asp Gly Lys Asp  
           1155                                  1160                  1165  
 Tyr Ile Pro Ile Asn Ala Ile Leu Thr Gly Asn Ser Gly Phe Thr Tyr  
           1170                                  1175                  1180  
 Ser Thr Pro Ala Phe Ser Glu Asp Phe Phe Lys Glu Ser Ile Ser Ala  
 1185                                  1190                  1195                  1200  
 Pro Lys Phe Asn Ser Gly Ser Ser Asp Asp Val Arg Tyr Val Asn Ala  
                                   1205                  1210                  1215  
 Phe Lys Phe Met Ser Leu Glu Arg Ile Lys Thr Phe Glu Glu Leu Leu  
                                   1220                  1225                  1230  
 Pro Asn Ala Thr Ser Met Phe Asp Asp Tyr Gln Gly Asp Ser Ser Thr  
           1235                                  1240                  1245  
 Leu Leu Ala Ser Pro Met Leu Lys Arg Phe Thr Trp Thr Asp Ser Lys  
           1250                                  1255                  1260  
 Pro Lys Ala Ser Leu Lys Ile Asp Leu Arg Val Thr Ser Lys Ser Lys  
 1265                                  1270                  1275                  1280  
 Glu Ser Gly Leu Ser Asp Val Ser Arg Pro Ser Phe Cys His Ser Ser  
                                   1285                  1290                  1295  
 Cys Gly His Val Ser Glu Gly Lys Arg Arg Phe Thr Tyr Asp His Ala  
                                   1300                  1305                  1310  
 Glu Leu Glu Arg Lys Ile Ala Cys Cys Ser Pro Pro Pro Asp Tyr Asn  
           1315                                  1320                  1325  
 Ser Val Val Leu Tyr Ser Thr Pro Pro Ile  
           1330                                  1335

<210> 85  
 <211> 289  
 <212> PRT  
 <213> Homo sapiens

<400> 85  
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 Ser Gly Leu Gly Gly Leu Thr Asp Lys Leu Thr Gln Ala Gln Ile Phe  
 35 40 45  
 Asp Tyr Ser Glu Ile Pro Asn Phe Pro Arg Ser Thr Val Pro Gly His  
 50 55 60  
 Ala Gly Arg Leu Val Phe Gly Phe Leu Asn Gly Arg Ala Cys Val Met  
 65 70 75 80  
 Met Gln Gly Arg Phe His Met Tyr Glu Gly Tyr Pro Leu Trp Lys Val  
 85 90 95  
 Thr Phe Pro Val Arg Val Phe His Leu Leu Gly Val Asp Thr Leu Val  
 100 105 110  
 Val Thr Asn Ala Ala Gly Gly Leu Asn Pro Lys Phe Glu Val Gly Asp  
 115 120 125  
 Ile Met Leu Ile Arg Asp His Ile Asn Leu Pro Gly Phe Ser Gly Gln  
 130 135 140  
 Asn Pro Leu Arg Gly Pro Asn Asp Glu Arg Phe Gly Asp Arg Phe Pro  
 145 150 155 160  
 Ala Met Ser Asp Ala Tyr Asp Arg Thr Met Arg Gln Arg Ala Leu Ser  
 165 170 175  
 Thr Trp Lys Gln Met Gly Glu Gln Arg Glu Leu Gln Glu Gly Thr Tyr  
 180 185 190  
 Val Met Val Ala Gly Pro Ser Phe Glu Thr Val Ala Glu Cys Arg Val  
 195 200 205  
 Leu Gln Lys Leu Gly Ala Asp Ala Val Gly Met Ser Thr Val Pro Glu  
 210 215 220  
 Val Ile Val Ala Arg His Cys Gly Leu Arg Val Phe Gly Phe Ser Leu  
 225 230 235 240  
 Ile Thr Asn Lys Val Ile Met Asp Tyr Glu Ser Leu Glu Lys Ala Asn  
 245 250 255  
 His Glu Glu Val Leu Ala Ala Gly Lys Gln Ala Ala Gln Lys Leu Glu  
 260 265 270  
 Gln Phe Val Ser Ile Leu Met Ala Ser Ile Pro Leu Pro Asp Lys Ala  
 275 280 285  
 Ser

<210> 86  
 <211> 509  
 <212> PRT  
 <213> Homo sapiens

<400> 86  
 Met Pro Pro Glu Gln His His Gln Pro Asn Lys Val Ser Pro Lys Leu  
 1 5 10 15  
 Cys Ser Ala Gln Pro Ala Pro Arg Gly Arg Arg Arg Pro Gly Gly Arg  
 20 25 30  
 Gly Pro Ala Ala Gly Gly Arg Thr Phe Ala Asn Ala Arg Phe Val Leu  
 35 40 45  
 Gly Glu Gly Val Ala Ile Glu Arg Gly Ala Asp Asp Thr Thr Gln Pro  
 50 55 60  
 Pro Val Ala Gly Ser Val Asn Pro Glu Gly Ala Ala Ala Ala Leu Val  
 65 70 75 80  
 Pro Leu Ala Gly Ala Arg Val Ala Ala Ala Ala Asp Ala Leu His Asp  
 85 90 95  
 Ala Pro Arg Ala Val Pro Gly Leu Leu Ala Leu Gly Leu Val Thr Gly  
 100 105 110



Gln Ala Asp Gln Arg Pro Gly Ala Gly Ala Arg Gln Gln Gln Gln Gln  
 115 120 125  
 Pro Gln Gln Arg Asp Gln Glu Val Pro Ala Ala Gly Gln Pro Pro Val  
 130 135 140  
 Pro Arg His Gln Val His Pro Pro Ala Pro Pro Pro Pro Pro Arg  
 145 150 155 160  
 Ser Arg Ala Gly Ser Gly Ala Gly Ala Leu Pro Cys Ala Gly His Thr  
 165 170 175  
 Arg Arg Arg Arg Arg Thr Ser Ser Pro Arg Ser Ser Pro Pro Leu Ser  
 180 185 190  
 Gly Pro Pro Gly Arg Ala Ser Pro Arg Gly Ala Arg Pro Pro Pro Leu  
 195 200 205  
 Leu Arg Ala Ala Pro Thr Pro Ser Pro Arg Ala Leu Ala Pro Ala Ala  
 210 215 220  
 Ala Ser Pro Pro Pro Pro Pro Pro Pro Gly Arg Glu Gly Glu Lys  
 225 230 235 240  
 Arg Lys Lys Phe Pro Pro Gly Ser Ser Gly Ser Thr Gln Thr Ser Gly  
 245 250 255  
 Ala Ala Ala Ala Val Ala Ala Ala Leu Gly Ser Ser Pro Gly Arg Arg  
 260 265 270  
 Arg Leu Leu Pro Leu Leu Leu Arg Val Gly Arg Pro Arg Ser Gly Ala  
 275 280 285  
 Ala Ser Gly Pro Val Pro Ala Ser Arg Ala Ala Glu Trp Ala Arg Trp  
 290 295 300  
 Arg Ser Thr Arg Ser Ala Ala Ser Ala Pro Arg Ala Pro Leu Ala Ser  
 305 310 315 320  
 Leu Leu Arg Arg Ser Ser Gly Arg Leu Phe Met Ala Gly Ala Ser Ala  
 325 330 335  
 Ala Arg Ala Ala Pro Ser Pro Ile Leu Pro Pro Pro Pro Asp Leu Pro  
 340 345 350  
 Pro Thr Pro Thr Arg Arg Ala Pro Leu Ile Gly Cys Pro Pro Ser Pro  
 355 360 365  
 Ala Arg Pro Ala Pro Ser Ala Ser Pro Ser Pro Ser Arg Ala Ala Gly  
 370 375 380  
 Pro Phe Leu Pro Pro Ser His Ala Ser Thr Ser Ser Arg Ser Pro Pro  
 385 390 395 400  
 Pro Arg Ala Arg Arg Thr Glu Pro Ala Val Pro Pro Ser Cys Gly Ser  
 405 410 415  
 Gly Pro Gly Ala Ala Gly Ala Leu Arg Met Gly Leu Gly Arg Thr Gln  
 420 425 430  
 Arg Ala Ala Arg Val Ala Val Ser Arg Ala Leu Ala Gly Thr Val Ala  
 435 440 445  
 Ala Ala Ala Gly Leu Gly Ala Arg Arg Ala Arg Arg Leu His Leu Arg  
 450 455 460  
 Gly Gln Ile Gly Val Arg Arg Val Ala Gly Thr Pro Glu Ala Arg Gly  
 465 470 475 480  
 Arg Gly Asp Gly Cys Ser Leu Gly Arg Val Ser Pro Asp Arg Thr Pro  
 485 490 495  
 Gly Lys Gly Ser Lys Gly Met Glu Pro Pro His Thr Gly  
 500 505

<210> 87

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> nuclear target motif

<400> 87  
Arg Arg Arg Pro  
1

<210> 88  
<211> 4  
<212> PRT  
<213> Artificial Sequence  
  
<220>  
<223> nuclear target motif

<400> 88  
Arg Arg Arg Arg  
1

<210> 89  
<211> 4  
<212> PRT  
<213> Artificial Sequence  
  
<220>  
<223> nuclear target motif

<400> 89  
Lys Arg Lys Lys  
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<210> 90  
<211> 7  
<212> PRT  
<213> Artificial Sequence  
  
<220>  
<223> nuclear target motif

<400> 90  
Pro Pro Arg Ala Arg Arg Thr  
1 5

<210> 91  
<211> 7  
<212> PRT  
<213> Artificial Sequence  
  
<220>  
<223> nuclear target motif

<400> 91  
Pro Arg Ala Arg Arg Thr Glu  
1 5

<210> 92  
<211> 712  
<212> PRT  
<213> Homo sapiens  
  
<220>  
<221> MOD\_RES  
<222> (510)...(510)  
<223> Xaa = Phe, Leu, Ile or Val

<400> 92

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Lys | Thr | Ala | Ala | Leu | Thr | Pro | Pro | Arg | Ser | Pro | Pro | Pro | Pro | Pro |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Leu | Arg | Pro | Pro | Pro | Met | Lys | Arg | Leu | Pro | Leu | Leu | Val | Val | Phe | Ser |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Thr | Leu | Leu | Asn | Cys | Ser | Tyr | Thr | Gln | Asn | Cys | Thr | Lys | Thr | Pro | Cys |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Leu | Pro | Asn | Ala | Lys | Cys | Glu | Ile | Arg | Asn | Gly | Ile | Glu | Ala | Cys | Tyr |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Cys | Asn | Met | Gly | Phe | Ser | Gly | Asn | Gly | Val | Thr | Ile | Cys | Glu | Asp | Asp |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Asn | Glu | Cys | Gly | Asn | Leu | Thr | Gln | Ser | Cys | Gly | Glu | Asn | Ala | Asn | Cys |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Thr | Asn | Thr | Glu | Gly | Ser | Tyr | Tyr | Cys | Met | Cys | Val | Pro | Gly | Phe | Arg |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Ser | Ser | Ser | Asn | Gln | Asp | Arg | Phe | Ile | Thr | Asn | Asp | Gly | Thr | Val | Cys |
|     |     |     | 115 |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Ile | Glu | Asn | Val | Asn | Ala | Asn | Cys | His | Leu | Asp | Asn | Val | Cys | Ile | Ala |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Ala | Asn | Ile | Asn | Lys | Thr | Leu | Thr | Lys | Ile | Arg | Ser | Ile | Lys | Glu | Pro |
| 145 |     |     |     | 150 |     |     |     |     |     | 155 |     |     |     |     | 160 |
| Val | Ala | Leu | Leu | Gln | Glu | Val | Tyr | Arg | Asn | Ser | Val | Thr | Asp | Leu | Ser |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Pro | Thr | Asp | Ile | Ile | Thr | Tyr | Ile | Glu | Ile | Leu | Ala | Glu | Ser | Ser | Ser |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Leu | Leu | Gly | Tyr | Lys | Asn | Asn | Thr | Ile | Ser | Ala | Lys | Asp | Thr | Leu | Ser |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Asn | Ser | Thr | Leu | Thr | Glu | Phe | Val | Lys | Thr | Val | Asn | Asn | Phe | Val | Gln |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Arg | Asp | Thr | Phe | Val | Val | Trp | Asp | Lys | Leu | Ser | Val | Asn | His | Arg | Arg |
| 225 |     |     |     | 230 |     |     |     |     |     | 235 |     |     |     | 240 |     |
| Thr | His | Leu | Thr | Lys | Leu | Met | His | Thr | Val | Glu | Gln | Ala | Thr | Leu | Arg |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Ile | Ser | Gln | Ser | Phe | Gln | Lys | Thr | Thr | Glu | Phe | Asp | Thr | Asn | Ser | Thr |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Asp | Ile | Ala | Leu | Lys | Val | Phe | Phe | Phe | Asp | Ser | Tyr | Asn | Met | Lys | His |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Ile | His | Pro | His | Met | Asn | Met | Asp | Gly | Asp | Tyr | Ile | Asn | Ile | Phe | Pro |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Lys | Arg | Lys | Ala | Ala | Tyr | Asp | Ser | Asn | Gly | Asn | Val | Ala | Val | Ala | Phe |
| 305 |     |     |     | 310 |     |     |     |     |     | 315 |     |     |     | 320 |     |
| Leu | Tyr | Tyr | Lys | Ser | Ile | Gly | Pro | Leu | Leu | Ser | Ser | Ser | Asp | Asn | Phe |
|     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |     |
| Leu | Leu | Lys | Pro | Gln | Asn | Tyr | Asp | Asn | Ser | Glu | Glu | Glu | Glu | Arg | Val |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Ile | Ser | Ser | Val | Ile | Ser | Val | Ser | Met | Ser | Ser | Asn | Pro | Pro | Thr | Leu |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Tyr | Glu | Leu | Glu | Lys | Ile | Thr | Phe | Thr | Leu | Ser | His | Arg | Lys | Val | Thr |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Asp | Arg | Tyr | Arg | Ser | Leu | Cys | Ala | Phe | Trp | Asn | Tyr | Ser | Pro | Asp | Thr |
| 385 |     |     |     | 390 |     |     |     |     |     | 395 |     |     |     | 400 |     |
| Met | Asn | Gly | Ser | Trp | Ser | Ser | Glu | Gly | Cys | Glu | Leu | Thr | Tyr | Ser | Asn |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Glu | Thr | His | Thr | Ser | Cys | Arg | Cys | Asn | His | Leu | Thr | His | Phe | Ala | Ile |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Leu | Met | Ser | Ser | Gly | Pro | Ser | Ile | Gly | Ile | Lys | Asp | Tyr | Asn | Ile | Leu |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Thr | Arg | Ile | Thr | Gln | Leu | Gly | Ile | Ile | Ile | Ser | Leu | Ile | Cys | Leu | Ala |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |
| Ile | Cys | Ile | Phe | Thr | Phe | Trp | Phe | Phe | Ser | Glu | Ile | Gln | Ser | Thr | Arg |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |

Thr Thr Ile His Lys Asn Leu Cys Cys Ser Leu Phe Leu Ala Glu Leu  
 485 490 495  
 Val Phe Leu Val Gly Ile Asn Thr Asn Thr Asn Lys Leu Xaa Ser Val  
 500 505 510  
 Ser Ile Ile Ala Gly Leu Leu His Tyr Phe Phe Leu Ala Ala Phe Ala  
 515 520 525  
 Trp Met Cys Ile Glu Gly Ile His Leu Tyr Leu Ile Val Val Gly Val  
 530 535 540  
 Ile Tyr Asn Lys Gly Phe Leu His Lys Asn Phe Tyr Ile Phe Gly Tyr  
 545 550 555 560  
 Leu Ser Pro Ala Val Val Val Gly Phe Ser Ala Ala Leu Gly Tyr Arg  
 565 570 575  
 Tyr Tyr Gly Thr Thr Lys Val Cys Trp Leu Ser Thr Glu Thr His Phe  
 580 585 590  
 Ile Trp Ser Phe Ile Gly Pro Ala Cys Leu Ile Ile Leu Val Asn Leu  
 595 600 605  
 Leu Ala Phe Gly Val Ile Ile Tyr Lys Val Phe Arg His Thr Ala Gly  
 610 615 620  
 Leu Lys Pro Glu Val Ser Cys Phe Glu Asn Ile Arg Ser Cys Ala Arg  
 625 630 635 640  
 Gly Ala Leu Ala Leu Phe Leu Leu Gly Thr Thr Trp Ile Phe Gly  
 645 650 655  
 Val Leu His Val Val His Ala Ser Val Val Thr Ala Tyr Leu Phe Thr  
 660 665 670  
 Val Ser Asn Ala Phe Gln Gly Met Phe Ile Phe Leu Phe Leu Cys Val  
 675 680 685  
 Leu Ser Arg Lys Ile Gln Glu Glu Tyr Tyr Arg Leu Phe Lys Asn Val  
 690 695 700  
 Pro Cys Cys Phe Gly Cys Leu Arg  
 705 710

<210> 93  
 <211> 948  
 <212> PRT  
 <213> Homo sapiens

<400> 93  
 Met Ile Leu Ser Leu Leu Phe Ser Leu Gly Gly Pro Leu Gly Trp Gly  
 1 5 10 15  
 Leu Leu Gly Ala Trp Ala Gln Ala Ser Ser Thr Ser Leu Ser Asp Leu  
 20 25 30  
 Gln Ser Ser Arg Thr Pro Gly Val Trp Lys Ala Glu Ala Glu Asp Thr  
 35 40 45  
 Ser Lys Asp Pro Val Gly Arg Asn Trp Cys Pro Tyr Pro Met Ser Lys  
 50 55 60  
 Leu Val Thr Leu Leu Ala Leu Cys Lys Thr Glu Lys Phe Leu Ile His  
 65 70 75 80  
 Ser Gln Gln Pro Cys Pro Gln Gly Ala Pro Asp Cys Gln Lys Val Lys  
 85 90 95  
 Val Met Tyr Arg Met Ala His Lys Pro Val Tyr Gln Val Lys Gln Lys  
 100 105 110  
 Val Leu Thr Ser Leu Ala Trp Arg Cys Cys Pro Gly Tyr Thr Gly Pro  
 115 120 125  
 Asn Cys Glu His His Asp Ser Met Ala Ile Pro Glu Pro Ala Asp Pro  
 130 135 140  
 Gly Asp Ser His Gln Glu Pro Gln Asp Gly Pro Val Ser Phe Lys Pro  
 145 150 155 160  
 Gly His Leu Ala Ala Val Ile Asn Glu Val Glu Val Gln Gln Glu Gln  
 165 170 175  
 Gln Glu His Leu Leu Gly Asp Leu Gln Asn Asp Val His Arg Val Ala  
 180 185 190

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Asp | Ser | Leu | Pro | Gly | Leu | Trp | Lys | Ala | Leu | Pro | Gly | Asn | Leu | Thr | Ala |  |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |  |
| Ala | Val | Met | Glu | Ala | Asn | Gln | Thr | Gly | His | Glu | Phe | Pro | Asp | Arg | Ser |  |
|     |     | 210 |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |  |
| Leu | Glu | Gln | Val | Leu | Leu | Pro | His | Val | Asp | Thr | Phe | Leu | Gln | Val | His |  |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Phe | Ser | Pro | Ile | Trp | Arg | Ser | Phe | Asn | Gln | Ser | Leu | His | Ser | Leu | Thr |  |
|     |     |     | 245 |     |     |     |     | 250 |     |     |     |     |     | 255 |     |  |
| Gln | Ala | Ile | Arg | Asn | Leu | Ser | Leu | Asp | Val | Glu | Ala | Asn | Arg | Gln | Ala |  |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |  |
| Ile | Ser | Arg | Val | Gln | Asp | Ser | Ala | Val | Ala | Arg | Ala | Asp | Phe | Gln | Glu |  |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |  |
| Leu | Gly | Ala | Lys | Phe | Glu | Ala | Lys | Val | Gln | Glu | Asn | Thr | Gln | Arg | Val |  |
|     |     | 290 |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |  |
| Gly | Gln | Leu | Arg | Gln | Asp | Val | Glu | Asp | Arg | Leu | His | Ala | Gln | His | Phe |  |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |  |
| Thr | Leu | His | Arg | Ser | Ile | Ser | Glu | Leu | Gln | Ala | Asp | Val | Asp | Thr | Lys |  |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |  |
| Leu | Lys | Arg | Leu | His | Lys | Ala | Gln | Glu | Ala | Pro | Gly | Thr | Asn | Gly | Ser |  |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |  |
| Leu | Val | Leu | Ala | Thr | Pro | Gly | Ala | Gly | Ala | Arg | Pro | Glu | Pro | Asp | Ser |  |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |  |
| Leu | Gln | Ala | Arg | Leu | Gly | Gln | Leu | Gln | Arg | Asn | Leu | Ser | Glu | Leu | His |  |
|     |     | 370 |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |  |
| Met | Thr | Thr | Ala | Arg | Arg | Glu | Glu | Glu | Leu | Gln | Tyr | Thr | Leu | Glu | Asp |  |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |  |
| Met | Arg | Ala | Thr | Leu | Thr | Arg | His | Val | Asp | Glu | Ile | Lys | Glu | Leu | Tyr |  |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |  |
| Ser | Glu | Ser | Asp | Glu | Thr | Phe | Asp | Gln | Ile | Ser | Lys | Val | Glu | Arg | Gln |  |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |  |
| Val | Glu | Glu | Leu | Gln | Val | Asn | His | Thr | Ala | Leu | Arg | Glu | Leu | Arg | Val |  |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |  |
| Ile | Leu | Met | Glu | Lys | Ser | Leu | Ile | Met | Glu | Glu | Asn | Lys | Glu | Glu | Val |  |
|     |     | 450 |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |  |
| Glu | Arg | Gln | Leu | Leu | Glu | Leu | Asn | Leu | Thr | Leu | Gln | His | Leu | Gln | Gly |  |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |  |
| Gly | His | Ala | Asp | Leu | Ile | Lys | Tyr | Val | Lys | Asp | Cys | Asn | Cys | Gln | Lys |  |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |  |
| Leu | Tyr | Leu | Asp | Leu | Asp | Val | Ile | Arg | Glu | Gly | Gln | Arg | Asp | Ala | Thr |  |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |  |
| Arg | Ala | Leu | Glu | Glu | Thr | Gln | Val | Ser | Leu | Asp | Glu | Arg | Arg | Gln | Leu |  |
|     |     |     | 515 |     |     |     | 520 |     |     |     |     | 525 |     |     |     |  |
| Asp | Gly | Ser | Ser | Leu | Gln | Ala | Leu | Gln | Asn | Ala | Val | Asp | Ala | Val | Ser |  |
|     |     |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |  |
| Leu | Ala | Val | Asp | Ala | His | Lys | Ala | Glu | Gly | Glu | Arg | Ala | Arg | Ala | Ala |  |
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |  |
| Thr | Ser | Arg | Leu | Arg | Ser | Gln | Val | Gln | Ala | Leu | Asp | Asp | Glu | Val | Gly |  |
|     |     |     |     | 565 |     |     |     |     | 570 |     |     |     |     | 575 |     |  |
| Ala | Leu | Lys | Ala | Ala | Ala | Ala | Glu | Ala | Arg | His | Glu | Val | Arg | Gln | Leu |  |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |  |
| His | Ser | Ala | Phe | Ala | Ala | Leu | Leu | Glu | Asp | Ala | Leu | Arg | His | Glu | Ala |  |
|     |     |     | 595 |     |     |     | 600 |     |     |     |     | 605 |     |     |     |  |
| Val | Leu | Ala | Ala | Leu | Phe | Gly | Glu | Glu | Val | Leu | Glu | Glu | Met | Ser | Glu |  |
|     |     |     |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |  |
| Gln | Thr | Pro | Gly | Pro | Leu | Pro | Leu | Ser | Tyr | Glu | Gln | Ile | Arg | Val | Ala |  |
| 625 |     |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     | 640 |  |
| Leu | Gln | Asp | Ala | Ala | Ser | Gly | Leu | Gln | Glu | Gln | Ala | Leu | Gly | Trp | Asp |  |
|     |     |     |     | 645 |     |     |     |     | 650 |     |     |     |     | 655 |     |  |
| Glu | Leu | Ala | Ala | Arg | Val | Thr | Ala | Leu | Glu | Gln | Ala | Ser | Glu | Pro | Pro |  |
|     |     |     | 660 |     |     |     |     | 665 |     |     |     |     | 670 |     |     |  |

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Arg Pro Ala Glu His Leu Glu Pro Ser His Asp Ala Gly Arg Glu Glu  
675 680 685  
Ala Ala Thr Thr Ala Leu Ala Gly Leu Ala Arg Glu Leu Gln Ser Leu  
690 695 700  
Ser Asn Asp Val Lys Asn Val Gly Arg Cys Cys Glu Ala Glu Ala Gly  
705 710 715 720  
Ala Gly Ala Ala Ser Leu Asn Ala Ser Leu Asp Gly Leu His Asn Ala  
725 730 735  
Leu Phe Ala Thr Gln Arg Ser Leu Glu Gln His Gln Arg Leu Phe His  
740 745 750  
Ser Leu Phe Gly Asn Phe Gln Gly Leu Met Glu Ala Asn Val Ser Leu  
755 760 765  
Asp Leu Gly Lys Leu Gln Thr Met Leu Ser Arg Lys Gly Lys Lys Gln  
770 775 780  
Gln Lys Asp Leu Glu Ala Pro Arg Lys Arg Asp Lys Lys Glu Ala Glu  
785 790 795 800  
Pro Leu Val Asp Ile Arg Val Thr Gly Pro Val Pro Gly Ala Leu Gly  
805 810 815  
Ala Ala Leu Trp Glu Ala Ser Pro Val Ala Phe Tyr Ala Ser Phe Ser  
820 825 830  
Glu Gly Thr Ala Ala Leu Gln Thr Val Lys Phe Asn Thr Thr Tyr Ile  
835 840 845  
Asn Ile Gly Ser Ser Tyr Phe Pro Glu His Gly Tyr Phe Arg Ala Pro  
850 855 860  
Glu Arg Gly Val Tyr Leu Phe Ala Val Ser Val Glu Phe Gly Pro Gly  
865 870 875 880  
Pro Gly Thr Gly Gln Leu Val Phe Gly Gly His His Arg Thr Pro Val  
885 890 895  
Cys Thr Thr Gly Gln Gly Ser Gly Ser Thr Ala Thr Val Phe Ala Met  
900 905 910  
Ala Glu Leu Gln Lys Gly Glu Arg Val Trp Phe Glu Leu Thr Gln Gly  
915 920 925  
Ser Ile Thr Lys Arg Ser Leu Ser Gly Thr Ala Phe Gly Gly Phe Leu  
930 935 940  
Met Phe Lys Thr  
945

<210> 94  
<211> 647  
<212> PRT  
<213> Homo sapiens

<400> 94  
Met Gly Lys Asp Phe Met Thr Lys Thr Pro Lys Ala Phe Ala Thr Lys  
1 5 10 15  
Ala Lys Ile Asp Lys Trp Asp Leu Ile Lys Leu Lys Ser Phe Cys Thr  
20 25 30  
Ala Lys Glu Thr Ile Ile Arg Val Asn Ser Gln Pro Thr Asp Trp Gln  
35 40 45  
Lys Thr Phe Ala Ile Tyr Pro Ser Asp Lys Gly Val Ile Ala Arg Ile  
50 55 60  
Tyr Lys Glu Leu Glu Gln Ile Tyr Lys Lys Lys Lys Pro Thr Lys Thr  
65 70 75 80  
Leu Arg Thr His Phe Leu Ser Arg Pro Lys Gly Asn Cys Trp Pro Leu  
85 90 95  
Gly Pro Arg Gly Asp Ser Trp Gln Leu Gly Gly Pro Ser Gly Ala Arg  
100 105 110  
Ala Glu Gly Lys Gly Gly Gly Thr Gly Leu Gly Lys Pro Ala Val Glu  
115 120 125  
Gly Gly Asp Arg Ala Pro Asp Thr Ala Leu Arg Pro Arg Ala Gly Gln  
130 135 140

10021660-120601

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ile | Gln | Val | Gly | Ser | Ser | Ser | Ala | Cys | Gly | Ala | Ser | Glu | Asn | Glu | Ala |  |
| 145 |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     |     | 160 |  |
| Gly | Val | Arg | Pro | Val | Pro | Pro | Leu | Ala | Gly | Ala | Leu | Ala | Arg | Ala | Gly |  |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |  |
| Arg | Arg | Arg | Thr | Pro | His | Cys | Arg | Pro | Cys | Trp | Leu | Leu | Gly | Leu | Gly |  |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |  |
| Gly | Leu | Leu | Gln | Pro | Ala | Pro | Arg | Tyr | His | Glu | Ala | Ala | Gly | Gly | Arg |  |
|     | 195 |     |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |  |
| Gly | Gly | Leu | His | Pro | Ala | Arg | Trp | Gly | Ala | Gln | His | Arg | Ala | Cys | Gly |  |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |  |
| Arg | Arg | Ala | Ala | Arg | Cys | Ala | Arg | Ala | Pro | Ala | Gly | Arg | Pro | Arg | Ala |  |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Arg | Arg | Gly | Leu | Gln | Arg | Pro | Ala | Val | Leu | Gly | Arg | Thr | Gly | Ala | Gln |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |  |
| Ala | Phe | Pro | Leu | His | Pro | Gly | Glu | Arg | Ala | Phe | Ala | Gly | Phe | Leu | Leu |  |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |  |
| Ala | Val | Leu | Arg | Pro | Arg | Arg | Ser | Arg | Lys | Arg | His | Ala | Ala | Val | Gly |  |
|     | 275 |     |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |  |
| Gly | Gly | Ala | Pro | Thr | Leu | Leu | His | Arg | Ala | Glu | Met | Arg | Gly | Thr | Pro |  |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |  |
| Gly | His | Arg | Trp | Gly | Arg | Ala | Arg | Ser | Trp | Lys | Glu | Met | Arg | Cys | His |  |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |  |
| Leu | Arg | Ala | Asn | Gly | Tyr | Leu | Cys | Lys | Tyr | Gln | Phe | Glu | Val | Leu | Cys |  |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |  |
| Pro | Ala | Pro | Arg | Pro | Gly | Ala | Ala | Ser | Asn | Leu | Ser | Tyr | Arg | Ala | Pro |  |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |  |
| Phe | Gln | Leu | His | Ser | Ala | Ala | Leu | Asp | Phe | Ser | Pro | Pro | Gly | Thr | Glu |  |
|     | 355 |     |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |  |
| Val | Ser | Ala | Leu | Cys | Arg | Gly | Gln | Leu | Pro | Ile | Ser | Val | Thr | Cys | Ile |  |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |  |
| Ala | Asp | Glu | Ile | Gly | Ala | Arg | Trp | Asp | Lys | Leu | Ser | Gly | Asp | Val | Leu |  |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |  |
| Cys | Pro | Cys | Pro | Gly | Arg | Tyr | Leu | Arg | Ala | Gly | Lys | Cys | Ala | Glu | Leu |  |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |  |
| Pro | Asn | Cys | Leu | Asp | Asp | Leu | Gly | Gly | Phe | Ala | Cys | Glu | Cys | Ala | Thr |  |
|     |     |     | 420 |     |     |     | 425 |     |     |     |     |     | 430 |     |     |  |
| Gly | Phe | Glu | Leu | Gly | Lys | Asp | Gly | Arg | Ser | Cys | Val | Thr | Ser | Gly | Glu |  |
|     | 435 |     |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |  |
| Gly | Gln | Pro | Thr | Leu | Gly | Gly | Thr | Gly | Val | Pro | Thr | Arg | Arg | Pro | Pro |  |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |  |
| Ala | Thr | Ala | Thr | Ser | Pro | Val | Pro | Gln | Arg | Thr | Trp | Pro | Ile | Arg | Val |  |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |  |
| Asp | Glu | Lys | Leu | Gly | Glu | Thr | Pro | Leu | Val | Pro | Glu | Gln | Asp | Asn | Ser |  |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |  |
| Val | Thr | Ser | Ile | Pro | Glu | Ile | Pro | Arg | Trp | Gly | Ser | Gln | Ser | Thr | Met |  |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |  |
| Ser | Thr | Leu | Gln | Met | Ser | Leu | Gln | Ala | Glu | Ser | Lys | Ala | Thr | Ile | Thr |  |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |  |
| Pro | Ser | Gly | Ser | Val | Ile | Ser | Lys | Phe | Asn | Ser | Thr | Thr | Ser | Ser | Ala |  |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |  |
| Thr | Pro | Gln | Ala | Phe | Asp | Ser | Ser | Ser | Ala | Val | Val | Phe | Ile | Phe | Val |  |
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |  |
| Ser | Thr | Ala | Val | Val | Val | Leu | Val | Ile | Leu | Thr | Met | Thr | Val | Leu | Gly |  |
|     |     |     |     | 565 |     |     |     |     | 570 |     |     |     |     | 575 |     |  |
| Leu | Val | Lys | Leu | Cys | Phe | His | Glu | Ser | Pro | Ser | Ser | Gln | Pro | Arg | Lys |  |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |  |
| Glu | Ser | Met | Gly | Pro | Pro | Gly | Leu | Glu | Ser | Asp | Pro | Glu | Pro | Ala | Ala |  |
|     |     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |  |
| Leu | Gly | Ser | Ser | Ser | Ala | His | Cys | Thr | Asn | Asn | Gly | Val | Lys | Val | Gly |  |
|     | 610 |     |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |  |



Asp Cys Asp Leu Arg Asp Arg Ala Glu Gly Ala Leu Leu Ala Glu Ser  
 625 630 635 640  
 Pro Leu Gly Ser Ser Asp Ala  
 645

<210> 95  
 <211> 462  
 <212> PRT  
 <213> Homo sapiens

<400> 95  
 Met Ile Gln Thr Val Pro Asp Pro Ala Ala His Ile Lys Glu Ala Leu  
 1 5 10 15  
 Ser Val Val Ser Glu Asp Gln Ser Leu Phe Glu Cys Ala Tyr Gly Thr  
 20 25 30  
 Pro His Leu Ala Lys Thr Glu Met Thr Ala Ser Ser Ser Ser Asp Tyr  
 35 40 45  
 Gly Gln Thr Ser Lys Met Ser Pro Arg Val Pro Gln Gln Asp Trp Leu  
 50 55 60  
 Ser Gln Pro Pro Ala Arg Val Thr Ile Lys Met Glu Cys Asn Pro Ser  
 65 70 75 80  
 Gln Val Asn Gly Ser Arg Asn Ser Pro Asp Glu Cys Ser Val Ala Lys  
 85 90 95  
 Gly Gly Lys Met Val Gly Ser Pro Asp Thr Val Gly Met Asn Tyr Gly  
 100 105 110  
 Ser Tyr Met Glu Glu Lys His Met Pro Pro Pro Asn Met Thr Thr Asn  
 115 120 125  
 Glu Arg Arg Val Ile Val Pro Ala Asp Pro Thr Leu Trp Ser Thr Asp  
 130 135 140  
 His Val Arg Gln Trp Leu Glu Trp Ala Val Lys Glu Tyr Gly Leu Pro  
 145 150 155 160  
 Asp Val Asn Ile Leu Leu Phe Gln Asn Ile Asp Gly Lys Glu Leu Cys  
 165 170 175  
 Lys Met Thr Lys Asp Asp Phe Gln Arg Leu Thr Pro Ser Tyr Asn Ala  
 180 185 190  
 Asp Ile Leu Leu Ser His Leu His Tyr Leu Arg Glu Thr Pro Leu Pro  
 195 200 205  
 His Leu Thr Ser Asp Asp Val Asp Lys Ala Leu Gln Asn Ser Pro Arg  
 210 215 220  
 Leu Met His Ala Arg Asn Thr Asp Leu Pro Tyr Glu Pro Pro Arg Arg  
 225 230 235 240  
 Ser Ala Trp Thr Gly His Gly His Pro Thr Pro Gln Ser Lys Ala Ala  
 245 250 255  
 Gln Pro Ser Pro Ser Thr Val Pro Lys Thr Glu Asp Gln Arg Pro Gln  
 260 265 270  
 Leu Asp Pro Tyr Gln Ile Leu Gly Pro Thr Ser Ser Arg Leu Ala Asn  
 275 280 285  
 Pro Gly Ser Gly Gln Ile Gln Leu Trp Gln Phe Leu Leu Glu Leu Leu  
 290 295 300  
 Ser Asp Ser Ser Asn Ser Ser Cys Ile Thr Trp Glu Gly Thr Asn Gly  
 305 310 315 320  
 Glu Phe Lys Met Thr Asp Pro Asp Glu Val Ala Arg Arg Trp Gly Glu  
 325 330 335  
 Arg Lys Ser Lys Pro Asn Met Asn Tyr Asp Lys Leu Ser Arg Ala Leu  
 340 345 350  
 Arg Tyr Tyr Tyr Asp Lys Asn Ile Met Thr Lys Val His Gly Lys Arg  
 355 360 365  
 Tyr Ala Tyr Lys Phe Asp Phe His Gly Ile Ala Gln Ala Leu Gln Pro  
 370 375 380  
 His Pro Pro Glu Ser Ser Leu Tyr Lys Tyr Pro Ser Asp Leu Pro Tyr  
 385 390 395 400

Met Gly Ser Tyr His Ala His Pro Gln Lys Met Asn Phe Val Ala Pro  
 405 410 415  
 His Pro Pro Ala Leu Pro Val Thr Ser Ser Ser Phe Phe Ala Ala Pro  
 420 425 430  
 Asn Pro Tyr Trp Asn Ser Pro Thr Gly Gly Ile Tyr Pro Asn Thr Arg  
 435 440 445  
 Leu Pro Thr Ser His Met Pro Ser His Leu Gly Thr Tyr Tyr  
 450 455 460

<210> 96  
 <211> 503  
 <212> PRT  
 <213> Homo sapiens

<400> 96  
 Met Thr Leu Gly Ser Pro Arg Lys Gly Leu Leu Met Leu Leu Met Ala  
 1 5 10 15  
 Leu Val Thr Gln Gly Asp Pro Val Lys Pro Ser Arg Gly Pro Leu Val  
 20 25 30  
 Thr Cys Thr Cys Glu Ser Pro His Cys Lys Gly Pro Thr Cys Arg Gly  
 35 40 45  
 Ala Trp Cys Thr Val Val Leu Val Arg Glu Glu Gly Arg His Pro Gln  
 50 55 60  
 Glu His Arg Gly Cys Gly Asn Leu His Arg Glu Leu Cys Arg Gly Arg  
 65 70 75 80  
 Pro Thr Glu Phe Val Asn His Tyr Cys Cys Asp Ser His Leu Cys Asn  
 85 90 95  
 His Asn Val Ser Leu Val Leu Glu Ala Thr Gln Pro Pro Ser Glu Gln  
 100 105 110  
 Pro Gly Thr Asp Gly Gln Leu Ala Leu Ile Leu Gly Pro Val Leu Ala  
 115 120 125  
 Leu Leu Ala Leu Val Ala Leu Gly Val Leu Gly Leu Trp His Val Arg  
 130 135 140  
 Arg Arg Gln Glu Lys Gln Arg Gly Leu His Ser Glu Leu Gly Glu Ser  
 145 150 155 160  
 Ser Leu Ile Leu Lys Ala Ser Glu Gln Gly Asp Thr Met Leu Gly Asp  
 165 170 175  
 Leu Leu Asp Ser Asp Cys Thr Thr Gly Ser Gly Ser Gly Leu Pro Phe  
 180 185 190  
 Leu Val Gln Arg Thr Val Ala Arg Gln Val Ala Leu Val Glu Cys Val  
 195 200 205  
 Gly Lys Gly Arg Tyr Gly Glu Val Trp Arg Gly Leu Trp His Gly Glu  
 210 215 220  
 Ser Val Ala Val Lys Ile Phe Ser Ser Arg Asp Glu Gln Ser Trp Phe  
 225 230 235 240  
 Arg Glu Thr Glu Ile Tyr Asn Thr Val Leu Leu Arg His Asp Asn Ile  
 245 250 255  
 Leu Gly Phe Ile Ala Ser Asp Met Thr Ser Arg Asn Ser Ser Thr Gln  
 260 265 270  
 Leu Trp Leu Ile Thr His Tyr His Glu His Gly Ser Leu Tyr Asp Phe  
 275 280 285  
 Leu Gln Arg Gln Thr Leu Glu Pro His Leu Ala Leu Arg Leu Ala Val  
 290 295 300  
 Ser Ala Ala Cys Gly Leu Ala His Leu His Val Glu Ile Phe Gly Thr  
 305 310 315 320  
 Gln Gly Lys Pro Ala Ile Ala His Arg Asp Phe Lys Ser Arg Asn Val  
 325 330 335  
 Leu Val Lys Ser Asn Leu Gln Cys Cys Ile Ala Asp Leu Gly Leu Ala  
 340 345 350  
 Val Met His Ser Gln Gly Ser Asp Tyr Leu Asp Ile Gly Asn Asn Pro  
 355 360 365

Arg Val Gly Thr Lys Arg Tyr Met Ala Pro Glu Val Leu Asp Glu Gln  
 370 375 380  
 Ile Arg Thr Asp Cys Phe Glu Ser Tyr Lys Trp Thr Asp Ile Trp Ala  
 385 390 395 400  
 Phe Gly Leu Val Leu Trp Glu Ile Ala Arg Arg Thr Ile Val Asn Gly  
 405 410 415  
 Ile Val Glu Asp Tyr Arg Pro Pro Phe Tyr Asp Val Val Pro Asn Asp  
 420 425 430  
 Pro Ser Phe Glu Asp Met Lys Lys Val Val Cys Val Asp Gln Gln Thr  
 435 440 445  
 Pro Thr Ile Pro Asn Arg Leu Ala Ala Asp Pro Val Leu Ser Gly Leu  
 450 455 460  
 Ala Gln Met Met Arg Glu Cys Trp Tyr Pro Asn Pro Ser Ala Arg Leu  
 465 470 475 480  
 Thr Ala Leu Arg Ile Lys Lys Thr Leu Gln Lys Ile Ser Asn Ser Pro  
 485 490 495  
 Glu Lys Pro Lys Val Ile Gln  
 500

<210> 97  
 <211> 54  
 <212> PRT  
 <213> Homo sapiens

<400> 97  
 Met Glu Trp Asn Gly Met Ala Trp Asn Arg Ile Lys Trp Asn Gly Ile  
 1 5 10 15  
 Asn Ser Ser Gly Met Glu Trp Asn Gly Met Glu Trp Asn Ala Val Gln  
 20 25 30  
 Cys Asn Arg Met Glu Trp Asn Glu Leu Glu Leu Thr Gly Met Glu Trp  
 35 40 45  
 Asn Gly Met His Leu Asn  
 50

<210> 98  
 <211> 275  
 <212> PRT  
 <213> Homo sapiens

<400> 98  
 Met Ser Ser Phe Gly Tyr Arg Thr Leu Thr Val Ala Leu Phe Thr Leu  
 1 5 10 15  
 Ile Cys Cys Pro Gly Ser Asp Glu Lys Val Phe Glu Val His Val Arg  
 20 25 30  
 Pro Lys Lys Leu Ala Val Glu Pro Lys Gly Ser Leu Glu Val Asn Cys  
 35 40 45  
 Ser Thr Thr Cys Asn Gln Pro Glu Val Gly Gly Leu Glu Thr Ser Leu  
 50 55 60  
 Asn Lys Ile Leu Leu Asp Glu Gln Ala Gln Trp Lys His Tyr Leu Val  
 65 70 75 80  
 Ser Asn Ile Ser His Asp Thr Val Leu Gln Cys His Phe Thr Cys Ser  
 85 90 95  
 Gly Lys Gln Glu Ser Met Asn Ser Asn Val Ser Val Tyr Gln Pro Pro  
 100 105 110  
 Arg Gln Val Ile Leu Thr Leu Gln Pro Thr Leu Val Ala Val Gly Lys  
 115 120 125  
 Ser Phe Thr Ile Glu Cys Arg Val Pro Thr Val Glu Pro Leu Asp Ser  
 130 135 140  
 Leu Thr Leu Phe Leu Phe Arg Gly Asn Glu Thr Leu His Tyr Glu Thr  
 145 150 155 160

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Gly | Lys | Ala | Ala | Pro | Ala | Pro | Gln | Glu | Ala | Thr | Ala | Thr | Phe | Asn |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Ser | Thr | Ala | Asp | Arg | Glu | Asp | Gly | His | Arg | Asn | Phe | Ser | Cys | Leu | Ala |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Val | Leu | Asp | Leu | Met | Ser | Arg | Gly | Gly | Asn | Ile | Phe | His | Lys | His | Ser |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Ala | Pro | Lys | Met | Leu | Glu | Ile | Tyr | Glu | Pro | Val | Ser | Asp | Ser | Gln | Met |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Val | Ile | Ile | Val | Thr | Val | Val | Ser | Val | Leu | Leu | Ser | Leu | Phe | Val | Thr |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Ser | Val | Leu | Leu | Cys | Phe | Ile | Phe | Gly | Gln | His | Leu | Arg | Gln | Gln | Arg |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Met | Gly | Thr | Tyr | Gly | Val | Arg | Ala | Ala | Trp | Arg | Arg | Leu | Pro | Gln | Ala |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Phe | Arg | Pro |     |     |     |     |     |     |     |     |     |     |     |     |     |
|     |     | 275 |     |     |     |     |     |     |     |     |     |     |     |     |     |

<210> 99  
 <211> 784  
 <212> PRT  
 <213> Homo sapiens

|          |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <400> 99 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Met      | Gln | Arg | Leu | Met | Met | Leu | Leu | Ala | Thr | Ser | Gly | Ala | Cys | Leu | Gly |
| 1        |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Leu      | Leu | Ala | Val | Ala | Ala | Val | Ala | Ala | Ala | Gly | Ala | Asn | Pro | Ala | Gln |
|          |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Arg      | Asp | Thr | His | Ser | Leu | Leu | Pro | Thr | His | Arg | Arg | Gln | Lys | Arg | Asp |
|          |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Trp      | Ile | Trp | Asn | Gln | Met | His | Ile | Asp | Glu | Glu | Lys | Asn | Thr | Ser | Leu |
|          | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Pro      | His | His | Val | Gly | Lys | Ile | Lys | Ser | Ser | Val | Ser | Arg | Lys | Asn | Ala |
| 65       |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |
| Lys      | Tyr | Leu | Leu | Lys | Gly | Glu | Tyr | Val | Gly | Lys | Val | Phe | Arg | Val | Asp |
|          |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Ala      | Glu | Thr | Gly | Asp | Val | Phe | Ala | Ile | Glu | Arg | Leu | Asp | Arg | Glu | Asn |
|          |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Ile      | Ser | Glu | Tyr | His | Leu | Thr | Ala | Val | Ile | Val | Asp | Lys | Asp | Thr | Gly |
|          |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Glu      | Asn | Leu | Glu | Thr | Pro | Ser | Ser | Phe | Thr | Ile | Lys | Val | His | Asp | Val |
|          | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Asn      | Asp | Asn | Trp | Pro | Val | Phe | Thr | His | Arg | Leu | Phe | Asn | Ala | Ser | Val |
| 145      |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
| Pro      | Glu | Ser | Ser | Ala | Val | Gly | Thr | Ser | Val | Ile | Ser | Val | Thr | Ala | Val |
|          |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Asp      | Ala | Asp | Asp | Pro | Thr | Val | Gly | Asp | His | Ala | Ser | Val | Met | Tyr | Gln |
|          |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Ile      | Leu | Lys | Gly | Lys | Glu | Tyr | Phe | Ala | Ile | Asp | Asn | Ser | Gly | Arg | Ile |
|          |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Ile      | Thr | Ile | Thr | Lys | Ser | Leu | Asp | Arg | Glu | Lys | Gln | Ala | Arg | Tyr | Glu |
|          | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Ile      | Val | Val | Glu | Ala | Arg | Asp | Ala | Gln | Gly | Leu | Arg | Gly | Asp | Ser | Gly |
| 225      |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Thr      | Ala | Thr | Val | Leu | Val | Thr | Leu | Gln | Asp | Ile | Asn | Asp | Asn | Phe | Pro |
|          |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Phe      | Phe | Thr | Gln | Thr | Lys | Tyr | Thr | Phe | Val | Val | Pro | Glu | Asp | Thr | Arg |
|          |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Val      | Gly | Thr | Ser | Val | Gly | Ser | Leu | Phe | Val | Glu | Asp | Pro | Asp | Glu | Pro |
|          |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Gln      | Asn | Arg | Met | Thr | Lys | Tyr | Ser | Ile | Leu | Arg | Gly | Asp | Tyr | Gln | Asp |
|          | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Phe | Thr | Ile | Glu | Thr | Asn | Pro | Ala | His | Asn | Glu | Gly | Ile | Ile | Lys |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |
| Pro | Met | Lys | Pro | Leu | Asp | Tyr | Glu | Tyr | Ile | Gln | Gln | Tyr | Ser | Phe | Ile |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Val | Glu | Ala | Thr | Asp | Pro | Thr | Ile | Asp | Leu | Arg | Tyr | Met | Ser | Pro | Pro |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Ala | Gly | Asn | Arg | Ala | Gln | Val | Ile | Asn | Ile | Thr | Asp | Val | Asp | Glu |     |
|     |     | 355 |     |     |     |     | 360 |     |     |     | 365 |     |     |     |     |
| Pro | Pro | Ile | Phe | Gln | Gln | Pro | Phe | Tyr | His | Phe | Gln | Leu | Lys | Glu | Asn |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Gln | Lys | Lys | Pro | Leu | Ile | Gly | Thr | Val | Leu | Ala | Met | Asp | Pro | Asp | Ala |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Ala | Arg | His | Ser | Ile | Gly | Tyr | Ser | Ile | Arg | Arg | Thr | Ser | Asp | Lys | Gly |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Gln | Phe | Phe | Arg | Val | Thr | Lys | Lys | Gly | Asp | Ile | Tyr | Asn | Glu | Lys | Glu |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Leu | Asp | Arg | Glu | Val | Tyr | Pro | Trp | Tyr | Asn | Leu | Thr | Val | Glu | Ala | Lys |
|     | 435 |     |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Glu | Leu | Asp | Ser | Thr | Gly | Thr | Pro | Thr | Gly | Lys | Glu | Ser | Ile | Val | Gln |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |
| Val | His | Ile | Glu | Val | Leu | Asp | Glu | Asn | Asp | Asn | Ala | Pro | Glu | Phe | Ala |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |
| Lys | Pro | Tyr | Gln | Pro | Lys | Val | Cys | Glu | Asn | Ala | Val | His | Gly | Gln | Leu |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |
| Val | Leu | Gln | Ile | Ser | Ala | Ile | Asp | Lys | Asp | Ile | Thr | Pro | Arg | Asn | Val |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |
| Lys | Phe | Lys | Phe | Thr | Leu | Asn | Thr | Glu | Asn | Asn | Phe | Thr | Leu | Thr | Asp |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |
| Asn | His | Asp | Asn | Thr | Ala | Asn | Ile | Thr | Val | Lys | Tyr | Gly | Gln | Phe | Asp |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |
| Arg | Glu | His | Thr | Lys | Val | His | Phe | Leu | Pro | Val | Val | Ile | Ser | Asp | Asn |
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |
| Gly | Met | Pro | Ser | Arg | Thr | Gly | Thr | Ser | Thr | Leu | Thr | Val | Ala | Val | Cys |
|     |     |     |     | 565 |     |     |     |     | 570 |     |     |     |     | 575 |     |
| Lys | Cys | Asn | Glu | Gln | Gly | Glu | Phe | Thr | Phe | Cys | Glu | Asp | Met | Ala | Ala |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |
| Gln | Val | Gly | Val | Ser | Ile | Gln | Ala | Val | Val | Ala | Ile | Leu | Leu | Cys | Ile |
|     |     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |
| Leu | Thr | Ile | Thr | Val | Ile | Thr | Leu | Leu | Ile | Phe | Leu | Arg | Arg | Arg | Leu |
|     | 610 |     |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |
| Arg | Lys | Gln | Ala | Arg | Ala | His | Gly | Lys | Ser | Val | Pro | Glu | Ile | His | Glu |
| 625 |     |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     | 640 |
| Gln | Leu | Val | Thr | Tyr | Asp | Glu | Glu | Gly | Gly | Gly | Glu | Met | Asp | Thr | Thr |
|     |     |     | 645 |     |     |     |     | 650 |     |     |     |     |     | 655 |     |
| Ser | Tyr | Asp | Val | Ser | Val | Leu | Asn | Ser | Val | Arg | Arg | Gly | Gly | Ala | Lys |
|     |     |     | 660 |     |     |     |     | 665 |     |     |     |     | 670 |     |     |
| Pro | Pro | Arg | Pro | Ala | Leu | Asp | Ala | Arg | Pro | Ser | Leu | Tyr | Ala | Gln | Val |
|     |     | 675 |     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |
| Gln | Lys | Pro | Pro | Arg | His | Ala | Pro | Gly | Ala | His | Gly | Gly | Pro | Gly | Glu |
|     | 690 |     |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     |
| Met | Ala | Ala | Met | Ile | Glu | Val | Lys | Lys | Asp | Glu | Ala | Asp | His | Asp | Gly |
| 705 |     |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     | 720 |
| Asp | Gly | Pro | Pro | Tyr | Asp | Thr | Leu | His | Ile | Tyr | Gly | Tyr | Glu | Gly | Ser |
|     |     |     | 725 |     |     |     |     |     | 730 |     |     |     |     | 735 |     |
| Glu | Ser | Ile | Ala | Glu | Ser | Leu | Ser | Ser | Leu | Gly | Thr | Asp | Ser | Ser | Asp |
|     |     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |     |     |
| Ser | Asp | Val | Asp | Tyr | Asp | Phe | Leu | Asn | Asp | Trp | Gly | Pro | Arg | Phe | Lys |
|     |     | 755 |     |     |     |     | 760 |     |     |     |     | 765 |     |     |     |
| Met | Leu | Ala | Glu | Leu | Tyr | Gly | Ser | Asp | Pro | Arg | Glu | Glu | Leu | Leu | Tyr |
|     | 770 |     |     |     |     | 775 |     |     |     |     | 780 |     |     |     |     |

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 <212> PRT  
 <213> Homo sapiens

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 Tyr Pro Glu Tyr Phe Gln Gln Pro Ala Pro Glu Tyr His Gln Pro Gln  
 35 40 45  
 Ala Pro Ala Asn Val Ala Lys Ile Gln Leu Arg Leu Ala Gly Gln Lys  
 50 55 60  
 Arg Lys His Ser Glu Gly Arg Val Glu Val Tyr Tyr Asp Gly Gln Trp  
 65 70 75 80  
 Gly Thr Val Cys Asp Asp Asp Phe Ser Ile His Ala Ala His Val Val  
 85 90 95  
 Cys Arg Glu Leu Gly Tyr Val Glu Ala Lys Ser Trp Thr Ala Ser Ser  
 100 105 110  
 Ser Tyr Gly Lys Gly Glu Gly Pro Ile Trp Leu Asp Asn Leu His Cys  
 115 120 125  
 Thr Gly Asn Glu Ala Thr Leu Ala Ala Cys Thr Ser Asn Gly Trp Gly  
 130 135 140  
 Val Thr Asp Cys Lys His Thr Glu Asp Val Gly Val Val Cys Ser Asp  
 145 150 155 160  
 Lys Arg Ile Pro Gly Phe Lys Phe Asp Asn Ser Leu Ile Asn Gln Ile  
 165 170 175  
 Glu Asn Leu Asn Ile Gln Val Glu Asp Ile Arg Ile Arg Ala Ile Leu  
 180 185 190  
 Ser Thr Tyr Arg Lys Arg Thr Pro Val Met Glu Gly Tyr Val Glu Val  
 195 200 205  
 Lys Glu Gly Lys Thr Trp Lys Gln Ile Cys Asp Lys His Trp Thr Ala  
 210 215 220  
 Lys Asn Ser Arg Val Val Cys Gly Met Phe Gly Phe Pro Gly Glu Arg  
 225 230 235 240  
 Thr Tyr Asn Thr Lys Val Tyr Lys Met Phe Ala Ser Arg Arg Lys Gln  
 245 250 255  
 Arg Tyr Trp Pro Phe Ser Met Asp Cys Thr Gly Thr Glu Ala His Ile  
 260 265 270  
 Ser Ser Cys Lys Leu Gly Pro Gln Val Ser Leu Asp Pro Met Lys Asn  
 275 280 285  
 Val Thr Cys Glu Asn Gly Leu Pro Ala Val Val Ser Cys Val Pro Gly  
 290 295 300  
 Gln Val Phe Ser Pro Asp Gly Pro Ser Arg Phe Arg Lys Ala Tyr Lys  
 305 310 315 320  
 Pro Glu Gln Pro Leu Val Arg Leu Arg Gly Gly Ala Tyr Ile Gly Glu  
 325 330 335  
 Gly Arg Val Glu Val Leu Lys Asn Gly Glu Trp Gly Thr Val Cys Asp  
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 Asp Lys Trp Asp Leu Val Ser Ala Ser Val Val Cys Arg Glu Leu Gly  
 355 360 365  
 Phe Gly Ser Ala Lys Glu Ala Val Thr Gly Ser Arg Leu Gly Gln Gly  
 370 375 380  
 Ile Gly Pro Ile His Leu Asn Glu Ile Gln Cys Thr Gly Asn Glu Lys  
 385 390 395 400  
 Ser Ile Ile Asp Cys Lys Phe Asn Ala Glu Ser Gln Gly Cys Asn His  
 405 410 415  
 Glu Glu Asp Ala Gly Val Arg Cys Asn Thr Pro Ala Met Gly Leu Gln  
 420 425 430

Lys Lys Leu Arg Leu Asn Gly Gly Arg Asn Pro Tyr Glu Gly Arg Val  
435 440 445  
Glu Val Leu Val Glu Arg Asn Gly Ser Leu Val Trp Gly Met Val Cys  
450 455 460  
Gly Gln Asn Trp Gly Ile Val Glu Ala Met Val Val Cys Arg Gln Leu  
465 470 475 480  
Gly Leu Gly Phe Ala Ser Asn Ala Phe Gln Glu Thr Trp Tyr Trp His  
485 490 495  
Gly Asp Val Asn Ser Asn Lys Val Val Met Ser Gly Val Lys Cys Ser  
500 505 510  
Gly Thr Glu Leu Ser Leu Ala His Cys Arg His Asp Gly Glu Asp Val  
515 520 525  
Ala Cys Pro Gln Gly Gly Val Gln Tyr Gly Ala Gly Val Ala Cys Ser  
530 535 540  
Glu Thr Ala Pro Asp Leu Val Leu Asn Ala Glu Met Val Gln Gln Thr  
545 550 555 560  
Thr Tyr Leu Glu Asp Arg Pro Met Phe Met Leu Gln Cys Ala Met Glu  
565 570 575  
Glu Asn Cys Leu Ser Ala Ser Ala Ala Gln Thr Asp Pro Thr Thr Gly  
580 585 590  
Tyr Arg Arg Leu Leu Arg Phe Ser Ser Gln Ile His Asn Asn Gly Gln  
595 600 605  
Ser Asp Phe Arg Pro Lys Asn Gly Arg His Ala Trp Ile Trp His Asp  
610 615 620  
Cys His Arg His Tyr His Ser Met Glu Val Phe Thr His Tyr Asp Leu  
625 630 635 640  
Leu Asn Leu Asn Gly Thr Lys Val Ala Glu Gly His Lys Ala Ser Phe  
645 650 655  
Cys Leu Glu Asp Thr Glu Cys Glu Gly Asp Ile Gln Lys Asn Tyr Glu  
660 665 670  
Cys Ala Asn Phe Gly Asp Gln Gly Ile Thr Met Gly Cys Trp Asp Met  
675 680 685  
Tyr Arg His Asp Ile Asp Cys Gln Trp Val Asp Ile Thr Asp Val Pro  
690 695 700  
Pro Gly Asp Tyr Leu Phe Gln Val Val Ile Asn Pro Asn Phe Glu Val  
705 710 715 720  
Ala Glu Ser Asp Tyr Ser Asn Asn Ile Met Lys Cys Arg Ser Arg Tyr  
725 730 735  
Asp Gly His Arg Ile Trp Met Tyr Asn Cys His Ile Gly Gly Ser Phe  
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Asn Gln Leu Ser Pro Gln  
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<212> PRT  
<213> Homo sapiens

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Leu Thr Asp Pro Gln Arg Phe Phe Leu Thr Cys Val Ser Gly Glu Ala  
35 40 45  
Gly Ala Gly Arg Gly Ser Asp Ala Trp Gly Pro Pro Leu Leu Leu Glu  
50 55 60  
Lys Asp Asp Arg Ile Val Arg Thr Pro Pro Gly Pro Pro Leu Arg Leu  
65 70 75 80



|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Arg | Asn | Gly | Ser | His | Gln | Val | Thr | Leu | Arg | Gly | Phe | Ser | Lys | Pro |
|     |     |     | 85  |     |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Ser | Asp | Leu | Val | Gly | Val | Phe | Ser | Cys | Val | Gly | Gly | Ala | Gly | Ala | Arg |
|     |     | 100 |     |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Arg | Thr | Arg | Val | Ile | Tyr | Val | His | Asn | Ser | Pro | Gly | Ala | His | Leu | Leu |
|     |     | 115 |     |     |     |     |     | 120 |     |     |     | 125 |     |     |     |
| Pro | Asp | Lys | Val | Thr | His | Thr | Val | Asn | Lys | Gly | Asp | Thr | Ala | Val | Leu |
|     |     | 130 |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Ser | Ala | Arg | Val | His | Lys | Glu | Lys | Gln | Thr | Asp | Val | Ile | Trp | Lys | Ser |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
| Asn | Gly | Ser | Tyr | Phe | Tyr | Thr | Leu | Asp | Trp | His | Glu | Ala | Gln | Asp | Gly |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Arg | Phe | Leu | Leu | Gln | Leu | Pro | Asn | Val | Gln | Pro | Pro | Ser | Ser | Gly | Ile |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Tyr | Ser | Ala | Thr | Tyr | Leu | Glu | Ala | Ser | Pro | Leu | Gly | Ser | Ala | Phe | Phe |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Arg | Leu | Ile | Val | Arg | Gly | Cys | Gly | Ala | Gly | Arg | Trp | Gly | Pro | Gly | Cys |
|     |     | 210 |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Thr | Lys | Glu | Cys | Pro | Gly | Cys | Leu | His | Gly | Gly | Val | Cys | His | Asp | His |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Asp | Gly | Glu | Cys | Val | Cys | Pro | Pro | Gly | Phe | Thr | Gly | Thr | Arg | Cys | Glu |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Gln | Ala | Cys | Arg | Glu | Gly | Arg | Phe | Gly | Gln | Ser | Cys | Gln | Glu | Gln | Cys |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Pro | Gly | Ile | Ser | Gly | Cys | Arg | Gly | Leu | Thr | Phe | Cys | Leu | Pro | Asp | Pro |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Tyr | Gly | Cys | Ser | Cys | Gly | Ser | Gly | Trp | Arg | Gly | Ser | Gln | Cys | Gln | Glu |
|     |     | 290 |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Ala | Cys | Ala | Pro | Gly | His | Phe | Gly | Ala | Asp | Cys | Arg | Leu | Gln | Cys | Gln |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |
| Cys | Gln | Asn | Gly | Gly | Thr | Cys | Asp | Arg | Phe | Ser | Gly | Cys | Val | Cys | Pro |
|     |     |     | 325 |     |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Ser | Gly | Trp | His | Gly | Val | His | Cys | Glu | Lys | Ser | Asp | Arg | Ile | Pro | Gln |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Ile | Leu | Asn | Met | Ala | Ser | Glu | Leu | Glu | Phe | Asn | Leu | Glu | Thr | Met | Pro |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Arg | Ile | Asn | Cys | Ala | Ala | Ala | Gly | Asn | Pro | Phe | Pro | Val | Arg | Gly | Ser |
|     |     | 370 |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Ile | Glu | Leu | Arg | Lys | Pro | Asp | Gly | Thr | Val | Leu | Leu | Ser | Thr | Lys | Ala |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Ile | Val | Glu | Pro | Glu | Lys | Thr | Thr | Ala | Glu | Phe | Glu | Val | Pro | Arg | Leu |
|     |     |     | 405 |     |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Val | Leu | Ala | Asp | Ser | Gly | Phe | Trp | Glu | Cys | Arg | Val | Ser | Thr | Ser | Gly |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Gly | Gln | Asp | Ser | Arg | Arg | Phe | Lys | Val | Asn | Val | Lys | Val | Pro | Pro | Val |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Pro | Leu | Ala | Ala | Pro | Arg | Leu | Leu | Thr | Lys | Gln | Ser | Arg | Gln | Leu | Val |
|     |     | 450 |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |
| Val | Ser | Pro | Leu | Val | Ser | Phe | Ser | Gly | Asp | Gly | Pro | Ile | Ser | Thr | Val |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |
| Arg | Leu | His | Tyr | Arg | Pro | Gln | Asp | Ser | Thr | Met | Asp | Trp | Ser | Thr | Ile |
|     |     |     | 485 |     |     |     |     |     | 490 |     |     |     |     | 495 |     |
| Val | Val | Asp | Pro | Ser | Glu | Asn | Val | Thr | Leu | Met | Asn | Leu | Arg | Pro | Lys |
|     |     | 500 |     |     |     |     |     | 505 |     |     |     | 510 |     |     |     |
| Thr | Gly | Tyr | Ser | Val | Arg | Val | Gln | Leu | Ser | Arg | Pro | Gly | Glu | Gly | Gly |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |
| Glu | Gly | Ala | Trp | Gly | Pro | Pro | Thr | Leu | Met | Thr | Thr | Asp | Cys | Pro | Glu |
|     |     | 530 |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |
| Pro | Leu | Leu | Gln | Pro | Trp | Leu | Glu | Gly | Trp | His | Val | Glu | Gly | Thr | Asp |
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |

|      |      |     |     |     |      |      |      |     |     |      |      |      |     |     |      |
|------|------|-----|-----|-----|------|------|------|-----|-----|------|------|------|-----|-----|------|
| Arg  | Leu  | Arg | Val | Ser | Trp  | Ser  | Leu  | Pro | Leu | Val  | Pro  | Gly  | Pro | Leu | Val  |
|      |      |     |     | 565 |      |      |      |     | 570 |      |      |      |     | 575 |      |
| Gly  | Asp  | Gly | Phe | Leu | Leu  | Arg  | Leu  | Trp | Asp | Gly  | Thr  | Arg  | Gly | Gln | Glu  |
|      |      |     | 580 |     |      |      |      | 585 |     |      |      |      | 590 |     |      |
| Arg  | Arg  | Glu | Asn | Val | Ser  | Ser  | Pro  | Gln | Ala | Arg  | Thr  | Ala  | Leu | Leu | Thr  |
|      |      | 595 |     |     |      |      | 600  |     |     |      |      | 605  |     |     |      |
| Gly  | Leu  | Thr | Pro | Gly | Thr  | His  | Tyr  | Gln | Leu | Asp  | Val  | Gln  | Leu | Tyr | His  |
|      | 610  |     |     |     | 615  |      |      |     |     | 620  |      |      |     |     |      |
| Cys  | Thr  | Leu | Leu | Gly | Pro  | Ala  | Ser  | Pro | Pro | Ala  | His  | Val  | Leu | Leu | Pro  |
| 625  |      |     |     |     | 630  |      |      |     |     | 635  |      |      |     |     | 640  |
| Pro  | Ser  | Gly | Pro | Pro | Ala  | Pro  | Arg  | His | Leu | His  | Ala  | Gln  | Ala | Leu | Ser  |
|      |      |     |     | 645 |      |      |      |     | 650 |      |      |      |     | 655 |      |
| Asp  | Ser  | Glu | Ile | Gln | Leu  | Thr  | Trp  | Lys | His | Pro  | Glu  | Ala  | Leu | Pro | Gly  |
|      |      |     | 660 |     |      |      |      | 665 |     |      |      |      | 670 |     |      |
| Pro  | Ile  | Ser | Lys | Tyr | Val  | Val  | Glu  | Val | Gln | Val  | Ala  | Gly  | Gly | Ala | Gly  |
|      | 675  |     |     |     |      |      | 680  |     |     |      |      | 685  |     |     |      |
| Asp  | Pro  | Leu | Trp | Ile | Asp  | Val  | Asp  | Arg | Pro | Glu  | Glu  | Thr  | Ser | Thr | Ile  |
|      | 690  |     |     |     | 695  |      |      |     |     | 700  |      |      |     |     |      |
| Ile  | Arg  | Gly | Leu | Asn | Ala  | Ser  | Thr  | Arg | Tyr | Leu  | Phe  | Arg  | Met | Arg | Ala  |
| 705  |      |     |     | 710 |      |      |      |     |     | 715  |      |      |     |     | 720  |
| Ser  | Ile  | Gln | Gly | Leu | Gly  | Asp  | Trp  | Ser | Asn | Thr  | Val  | Glu  | Glu | Ser | Thr  |
|      |      |     |     | 725 |      |      |      |     | 730 |      |      |      |     | 735 |      |
| Leu  | Gly  | Asn | Gly | Leu | Gln  | Ala  | Glu  | Gly | Pro | Val  | Gln  | Glu  | Ser | Arg | Ala  |
|      |      | 740 |     |     |      |      | 745  |     |     |      |      | 750  |     |     |      |
| Ala  | Glu  | Glu | Gly | Leu | Asp  | Gln  | Gln  | Leu | Ile | Leu  | Ala  | Val  | Val | Gly | Ser  |
|      | 755  |     |     |     |      | 760  |      |     |     |      |      | 765  |     |     |      |
| Val  | Ser  | Ala | Thr | Cys | Leu  | Thr  | Ile  | Leu | Ala | Ala  | Leu  | Leu  | Thr | Leu | Val  |
|      | 770  |     |     |     |      | 775  |      |     |     |      | 780  |      |     |     |      |
| Cys  | Ile  | Arg | Arg | Ser | Cys  | Leu  | His  | Arg | Arg | Arg  | Thr  | Phe  | Thr | Tyr | Gln  |
| 785  |      |     |     | 790 |      |      |      |     | 795 |      |      |      |     |     | 800  |
| Ser  | Gly  | Ser | Gly | Glu | Glu  | Thr  | Ile  | Leu | Gln | Phe  | Ser  | Ser  | Gly | Thr | Leu  |
|      |      |     | 805 |     |      |      |      | 810 |     |      |      |      | 815 |     |      |
| Thr  | Leu  | Thr | Arg | Arg | Pro  | Lys  | Leu  | Gln | Pro | Glu  | Pro  | Leu  | Ser | Tyr | Pro  |
|      |      |     | 820 |     |      |      |      | 825 |     |      |      |      | 830 |     |      |
| Val  | Leu  | Glu | Trp | Glu | Asp  | Ile  | Thr  | Phe | Glu | Asp  | Leu  | Ile  | Gly | Glu | Gly  |
|      | 835  |     |     |     |      | 840  |      |     |     |      |      | 845  |     |     |      |
| Asn  | Phe  | Gly | Gln | Val | Ile  | Arg  | Ala  | Met | Ile | Lys  | Lys  | Asp  | Gly | Leu | Lys  |
|      | 850  |     |     |     | 855  |      |      |     |     | 860  |      |      |     |     |      |
| Met  | Asn  | Ala | Ala | Ile | Lys  | Met  | Leu  | Lys | Glu | Tyr  | Ala  | Ser  | Glu | Asn | Asp  |
| 865  |      |     |     |     | 870  |      |      |     |     | 875  |      |      |     |     | 880  |
| His  | Arg  | Asp | Phe | Ala | Gly  | Glu  | Leu  | Glu | Val | Leu  | Cys  | Lys  | Leu | Gly | His  |
|      |      |     | 885 |     |      |      |      | 890 |     |      |      |      | 895 |     |      |
| His  | Pro  | Asn | Ile | Ile | Asn  | Leu  | Leu  | Gly | Ala | Cys  | Lys  | Asn  | Arg | Gly | Tyr  |
|      |      | 900 |     |     |      |      |      | 905 |     |      |      |      | 910 |     |      |
| Leu  | Tyr  | Ile | Ala | Ile | Glu  | Tyr  | Ala  | Pro | Tyr | Gly  | Asn  | Leu  | Leu | Asp | Phe  |
|      | 915  |     |     |     |      |      | 920  |     |     |      |      | 925  |     |     |      |
| Leu  | Arg  | Lys | Ser | Arg | Val  | Leu  | Glu  | Thr | Asp | Pro  | Ala  | Phe  | Ala | Arg | Glu  |
|      | 930  |     |     |     |      | 935  |      |     |     |      | 940  |      |     |     |      |
| His  | Gly  | Thr | Ala | Ser | Thr  | Leu  | Ser  | Ser | Arg | Gln  | Leu  | Leu  | Arg | Phe | Ala  |
| 945  |      |     |     |     | 950  |      |      |     |     | 955  |      |      |     |     | 960  |
| Ser  | Asp  | Ala | Ala | Asn | Gly  | Met  | Gln  | Tyr | Leu | Ser  | Glu  | Lys  | Gln | Phe | Ile  |
|      |      |     |     | 965 |      |      |      |     | 970 |      |      |      |     | 975 |      |
| His  | Arg  | Asp | Leu | Ala | Ala  | Arg  | Asn  | Val | Leu | Val  | Gly  | Glu  | Asn | Leu | Ala  |
|      |      |     | 980 |     |      |      | 985  |     |     |      |      |      | 990 |     |      |
| Ser  | Lys  | Ile | Ala | Asp | Phe  | Gly  | Leu  | Ser | Arg | Gly  | Glu  | Glu  | Val | Tyr | Val  |
|      | 995  |     |     |     |      |      | 1000 |     |     |      |      | 1005 |     |     |      |
| Lys  | Lys  | Thr | Met | Gly | Arg  | Leu  | Pro  | Val | Arg | Trp  | Met  | Ala  | Ile | Glu | Ser  |
|      | 1010 |     |     |     |      | 1015 |      |     |     |      | 1020 |      |     |     |      |
| Leu  | Asn  | Tyr | Ser | Val | Tyr  | Thr  | Thr  | Lys | Ser | Asp  | Val  | Trp  | Ser | Phe | Gly  |
| 1025 |      |     |     |     | 1030 |      |      |     |     | 1035 |      |      |     |     | 1040 |

Val Leu Leu Trp Glu Ile Val Ser Leu Gly Gly Thr Pro Tyr Cys Gly  
1045 1050 1055  
Met Thr Cys Ala Glu Leu Tyr Glu Lys Leu Pro Gln Gly Tyr Arg Met  
1060 1065 1070  
Glu Gln Pro Arg Asn Cys Asp Asp Glu Val Tyr Glu Leu Met Arg Gln  
1075 1080 1085  
Cys Trp Arg Asp Arg Pro Tyr Glu Arg Pro Pro Phe Ala Gln Ile Ala  
1090 1095 1100  
Leu Gln Leu Gly Arg Met Leu Glu Ala Arg Lys Ala Tyr Val Asn Met  
1105 1110 1115 1120  
Ser Leu Phe Glu Asn Phe Thr Tyr Ala Gly Ile Asp Ala Thr Ala Glu  
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Glu Ala

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<212> PRT  
<213> Homo sapiens

<400> 102  
Met Pro Val Met Arg Leu Phe Pro Cys Phe Leu Gln Leu Leu Ala Gly  
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Leu Ala Leu Pro Ala Val Pro Pro Gln Gln Trp Ala Leu Ser Ala Gly  
20 25 30  
Asn Gly Ser Ser Glu Val Glu Val Val Pro Phe Gln Glu Val Trp Gly  
35 40 45  
Arg Ser Tyr Cys Arg Ala Leu Glu Arg Leu Val Asp Val Val Ser Glu  
50 55 60  
Tyr Pro Ser Glu Val Glu His Met Phe Ser Pro Ser Cys Val Ser Leu  
65 70 75 80  
Leu Arg Cys Thr Gly Cys Cys Gly Asp Glu Asn Leu His Cys Val Pro  
85 90 95  
Val Glu Thr Ala Asn Val Thr Met Gln Leu Leu Lys Ile Arg Ser Gly  
100 105 110  
Asp Arg Pro Ser Tyr Val Glu Leu Thr Phe Ser Gln His Val Arg Cys  
115 120 125  
Glu Cys Arg Pro Leu Arg Glu Lys Met Lys Pro Glu Arg Cys Gly Asp  
130 135 140  
Ala Val Pro Arg Arg  
145

<210> 103  
<211> 1376  
<212> PRT  
<213> Homo sapiens

<400> 103  
Met Glu Gly Asp Arg Val Ala Gly Arg Pro Val Leu Ser Ser Leu Pro  
1 5 10 15  
Val Leu Leu Leu Leu Gln Leu Leu Met Leu Arg Ala Ala Ala Leu His  
20 25 30  
Pro Asp Glu Leu Phe Pro His Gly Glu Ser Trp Trp Asp Gln Leu Leu  
35 40 45  
Gln Glu Gly Asp Asp Val Lys Leu Ser Arg Gly Glu Ala Gly Glu Ser  
50 55 60  
Pro Ala Leu Leu Thr Lys Pro Asp Ser Ala Thr Ser Thr Trp Ala Pro  
65 70 75 80  
Thr Ala Ser Ser Pro Leu Arg Thr Ser Pro Gly Lys Arg Ser Met Trp  
85 90 95

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Thr | Met | Ile | Ser | Pro | Pro | Thr | Ser | Arg | Pro | Ser | Pro | Leu | Phe | Trp | Arg |  |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |  |
| Thr | Ser | Thr | Arg | Ala | Thr | Ala | Glu | Ala | Glu | Ser | Cys | Thr | Glu | Arg | Thr |  |
|     |     |     | 115 |     |     |     | 120 |     |     |     |     | 125 |     |     |     |  |
| Pro | Pro | Pro | Gln | Cys | Trp | Ala | Trp | Pro | Pro | Ala | Met | Cys | Ala | Leu | Ala |  |
|     |     |     | 130 |     |     | 135 |     |     |     |     | 140 |     |     |     |     |  |
| Ser | Arg | Ala | Leu | Arg | Ala | Phe | Tyr | Pro | His | Pro | Arg | Leu | Pro | Gly | His |  |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |  |
| Leu | Gly | Ala | Gly | Arg | Arg | Leu | Arg | Gly | Gly | Gln | Thr | Arg | Ala | Leu | Pro |  |
|     |     |     |     | 165 |     |     |     | 170 |     |     |     |     |     | 175 |     |  |
| Ser | Gly | Glu | Leu | Asn | Thr | Phe | Gln | Ala | Val | Leu | Ala | Ser | Asp | Gly | Ser |  |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |  |
| Asp | Ser | Tyr | Ala | Leu | Phe | Leu | Tyr | Pro | Ala | Asn | Gly | Leu | Gln | Phe | Leu |  |
|     |     | 195 |     |     |     |     | 200 |     |     |     | 205 |     |     |     |     |  |
| Gly | Thr | Arg | Pro | Lys | Glu | Ser | Tyr | Asn | Val | Gln | Leu | Gln | Leu | Pro | Ala |  |
|     |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |     |  |
| Arg | Val | Gly | Phe | Cys | Arg | Gly | Glu | Ala | Asp | Asp | Leu | Lys | Ser | Glu | Gly |  |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Pro | Tyr | Phe | Ser | Leu | Thr | Ser | Thr | Glu | Gln | Ser | Val | Lys | Asn | Leu | Tyr |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |  |
| Gln | Leu | Ser | Asn | Leu | Gly | Ile | Pro | Gly | Val | Trp | Ala | Phe | His | Ile | Gly |  |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |  |
| Ser | Thr | Ser | Pro | Leu | Asp | Asn | Val | Arg | Pro | Ala | Ala | Val | Gly | Asp | Leu |  |
|     |     |     | 275 |     |     |     | 280 |     |     |     |     |     | 285 |     |     |  |
| Ser | Ala | Ala | His | Ser | Ser | Val | Pro | Leu | Gly | Arg | Ser | Phe | Ser | His | Ala |  |
|     |     | 290 |     |     |     | 295 |     |     |     | 300 |     |     |     |     |     |  |
| Thr | Ala | Leu | Glu | Ser | Asp | Tyr | Asn | Glu | Asp | Asn | Leu | Asp | Tyr | Tyr | Asp |  |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |  |
| Val | Asn | Glu | Glu | Glu | Ala | Glu | Tyr | Leu | Pro | Gly | Glu | Pro | Glu | Glu | Ala |  |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |  |
| Leu | Asn | Gly | His | Ser | Ser | Ile | Asp | Val | Ser | Phe | Gln | Ser | Lys | Val | Asp |  |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |  |
| Thr | Lys | Pro | Leu | Glu | Glu | Ser | Ser | Thr | Leu | Asp | Pro | His | Thr | Lys | Glu |  |
|     |     |     | 355 |     |     |     | 360 |     |     |     |     | 365 |     |     |     |  |
| Gly | Thr | Ser | Leu | Gly | Glu | Val | Gly | Gly | Pro | Asp | Leu | Lys | Gly | Gln | Val |  |
|     |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |     |  |
| Glu | Pro | Trp | Asp | Glu | Arg | Glu | Thr | Arg | Ser | Pro | Ala | Pro | Pro | Glu | Val |  |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |  |
| Asp | Arg | Asp | Ser | Leu | Ala | Pro | Ser | Trp | Glu | Thr | Pro | Pro | Pro | Tyr | Pro |  |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |  |
| Glu | Asn | Gly | Ser | Ile | Gln | Pro | Tyr | Pro | Asp | Gly | Gly | Pro | Val | Pro | Ser |  |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |  |
| Glu | Met | Asp | Val | Pro | Pro | Ala | His | Pro | Glu | Glu | Glu | Ile | Val | Leu | Arg |  |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |  |
| Ser | Tyr | Pro | Ala | Ser | Gly | His | Thr | Thr | Pro | Leu | Ser | Arg | Gly | Thr | Tyr |  |
|     |     | 450 |     |     |     | 455 |     |     |     | 460 |     |     |     |     |     |  |
| Glu | Val | Gly | Leu | Glu | Asp | Asn | Ile | Gly | Ser | Asn | Thr | Glu | Val | Phe | Thr |  |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |  |
| Tyr | Asn | Ala | Ala | Asn | Lys | Glu | Thr | Cys | Glu | His | Asn | His | Arg | Gln | Cys |  |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |  |
| Ser | Arg | His | Ala | Phe | Cys | Thr | Asp | Tyr | Ala | Thr | Gly | Phe | Cys | Cys | His |  |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |  |
| Cys | Gln | Ser | Lys | Phe | Tyr | Gly | Asn | Gly | Lys | His | Cys | Leu | Pro | Glu | Gly |  |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |  |
| Ala | Pro | His | Arg | Val | Asn | Gly | Lys | Val | Ser | Gly | His | Leu | His | Val | Gly |  |
|     |     | 530 |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |  |
| His | Thr | Pro | Val | His | Phe | Thr | Asp | Val | Asp | Leu | His | Ala | Tyr | Ile | Val |  |
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |  |
| Gly | Asn | Asp | Gly | Arg | Ala | Tyr | Thr | Ala | Ile | Ser | His | Ile | Pro | Gln | Pro |  |
|     |     |     |     | 565 |     |     |     |     | 570 |     |     |     |     | 575 |     |  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ala | Gln | Ala | Leu | Leu | Pro | Leu | Thr | Pro | Ile | Gly | Gly | Leu | Phe | Gly |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |
| Trp | Leu | Phe | Ala | Leu | Glu | Lys | Pro | Gly | Ser | Glu | Asn | Gly | Phe | Ser | Leu |
|     |     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |
| Ala | Gly | Ala | Ala | Phe | Thr | His | Asp | Met | Glu | Val | Thr | Phe | Tyr | Pro | Gly |
|     | 610 |     |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |
| Glu | Glu | Thr | Val | Arg | Ile | Thr | Gln | Thr | Ala | Glu | Gly | Leu | Asp | Pro | Glu |
| 625 |     |     |     | 630 |     |     |     |     |     | 635 |     |     |     |     | 640 |
| Asn | Tyr | Leu | Ser | Ile | Lys | Thr | Asn | Ile | Gln | Gly | Gln | Val | Pro | Tyr | Val |
|     |     |     | 645 |     |     |     |     | 650 |     |     |     |     |     | 655 |     |
| Pro | Ala | Asn | Phe | Thr | Ala | His | Ile | Ser | Pro | Tyr | Lys | Glu | Leu | Tyr | His |
|     |     |     | 660 |     |     |     |     | 665 |     |     |     |     | 670 |     |     |
| Tyr | Ser | Asp | Ser | Thr | Val | Thr | Ser | Thr | Ser | Ser | Arg | Asp | Tyr | Ser | Leu |
|     |     | 675 |     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |
| Thr | Phe | Gly | Ala | Ile | Asn | Gln | Thr | Trp | Ser | Tyr | Arg | Ile | His | Gln | Asn |
|     | 690 |     |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     |
| Ile | Thr | Tyr | Gln | Val | Cys | Arg | His | Ala | Pro | Arg | His | Pro | Ser | Phe | Pro |
| 705 |     |     |     | 710 |     |     |     |     |     | 715 |     |     |     |     | 720 |
| Thr | Thr | Gln | Gln | Leu | Asn | Val | Asp | Arg | Val | Phe | Ala | Leu | Tyr | Asn | Asp |
|     |     |     | 725 |     |     |     |     |     | 730 |     |     |     |     | 735 |     |
| Glu | Glu | Arg | Val | Leu | Arg | Phe | Ala | Val | Thr | Asn | Gln | Ile | Gly | Pro | Val |
|     |     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |     |     |
| Lys | Glu | Asp | Ser | Asp | Pro | Thr | Pro | Val | Asn | Pro | Cys | Tyr | Asp | Gly | Ser |
|     |     | 755 |     |     |     |     | 760 |     |     |     |     | 765 |     |     |     |
| His | Met | Cys | Asp | Thr | Thr | Ala | Arg | Cys | His | Pro | Gly | Thr | Gly | Val | Asp |
|     | 770 |     |     |     |     | 775 |     |     |     |     | 780 |     |     |     |     |
| Tyr | Thr | Cys | Glu | Cys | Ala | Ser | Gly | Tyr | Gln | Gly | Asp | Gly | Arg | Asn | Cys |
| 785 |     |     |     | 790 |     |     |     |     |     | 795 |     |     |     |     | 800 |
| Val | Asp | Glu | Asn | Glu | Cys | Ala | Thr | Gly | Phe | His | Arg | Cys | Gly | Pro | Asn |
|     |     |     | 805 |     |     |     |     | 810 |     |     |     |     | 815 |     |     |
| Ser | Val | Cys | Ile | Asn | Leu | Pro | Gly | Ser | Tyr | Arg | Cys | Glu | Cys | Arg | Ser |
|     |     |     | 820 |     |     |     | 825 |     |     |     |     | 830 |     |     |     |
| Gly | Tyr | Glu | Phe | Ala | Asp | Asp | Arg | His | Thr | Cys | Ile | Leu | Ile | Thr | Pro |
|     |     | 835 |     |     |     | 840 |     |     |     |     |     | 845 |     |     |     |
| Pro | Ala | Asn | Pro | Cys | Glu | Asp | Gly | Ser | His | Thr | Cys | Ala | Pro | Ala | Gly |
|     | 850 |     |     |     |     | 855 |     |     |     |     | 860 |     |     |     |     |
| Gln | Ala | Arg | Cys | Val | His | Gly | Gly | Ser | Thr | Phe | Ser | Cys | Ala | Cys |     |
| 865 |     |     |     | 870 |     |     |     |     | 875 |     |     |     |     | 880 |     |
| Leu | Pro | Gly | Tyr | Ala | Gly | Asp | Gly | His | Gln | Cys | Thr | Asp | Val | Asp | Glu |
|     |     |     | 885 |     |     |     |     | 890 |     |     |     |     | 895 |     |     |
| Cys | Ser | Glu | Asn | Arg | Cys | His | Pro | Ala | Ala | Thr | Cys | Tyr | Asn | Thr | Pro |
|     |     |     | 900 |     |     |     | 905 |     |     |     |     | 910 |     |     |     |
| Gly | Ser | Phe | Ser | Cys | Arg | Cys |     |     |     |     |     |     |     |     |     |

Gly Lys Ser Asp Phe Cys Trp Cys Val Asp Lys Asp Gly Arg Glu Val  
1060 1065 1070  
Gln Gly Thr Arg Ser Gln Pro Gly Thr Thr Pro Ala Cys Ile Pro Thr  
1075 1080 1085  
Val Ala Pro Pro Met Val Arg Pro Thr Pro Arg Pro Asp Val Thr Pro  
1090 1095 1100  
Pro Ser Val Gly Thr Phe Leu Leu Tyr Thr Gln Gly Gln Gln Ile Gly  
1105 1110 1115 1120  
Tyr Leu Pro Leu Asn Gly Thr Arg Leu Gln Lys Asp Ala Ala Lys Thr  
1125 1130 1135  
Leu Leu Ser Leu His Gly Ser Ile Ile Val Gly Ile Asp Tyr Asp Cys  
1140 1145 1150  
Arg Glu Arg Met Val Tyr Trp Thr Asp Val Ala Gly Arg Thr Ile Ser  
1155 1160 1165  
Arg Ala Gly Leu Glu Leu Gly Ala Glu Pro Glu Thr Ile Val Asn Ser  
1170 1175 1180  
Gly Leu Ile Ser Pro Glu Gly Leu Ala Ile Asp His Ile Arg Arg Thr  
1185 1190 1195 1200  
Met Tyr Trp Thr Asp Ser Val Leu Asp Lys Ile Glu Ser Ala Leu Leu  
1205 1210 1215  
Asp Gly Ser Glu Arg Lys Val Leu Phe Tyr Thr Asp Leu Val Asn Pro  
1220 1225 1230  
Arg Ala Ile Ala Val Asp Pro Ile Arg Gly Asn Leu Tyr Trp Thr Asp  
1235 1240 1245  
Trp Asn Arg Glu Ala Pro Lys Ile Glu Thr Ser Ser Leu Asp Gly Glu  
1250 1255 1260  
Asn Arg Arg Ile Leu Ile Asn Thr Asp Ile Gly Leu Pro Asn Gly Leu  
1265 1270 1275 1280  
Thr Phe Asp Pro Phe Ser Lys Leu Leu Cys Trp Ala Asp Ala Gly Thr  
1285 1290 1295  
Lys Lys Leu Glu Cys Thr Leu Pro Asp Gly Thr Gly Arg Arg Val Ile  
1300 1305 1310  
Gln Asn Asn Leu Lys Tyr Pro Phe Ser Ile Val Ser Tyr Ala Asp His  
1315 1320 1325  
Phe Tyr His Thr Asp Trp Arg Arg Asp Gly Val Val Ser Val Asn Lys  
1330 1335 1340  
His Ser Gly Gln Phe Thr Asp Glu Tyr Leu Pro Glu Gln Arg Ser His  
1345 1350 1355 1360  
Leu Tyr Gly Ile Thr Ala Val Tyr Pro Tyr Cys Pro Thr Gly Arg Lys  
1365 1370 1375

<210> 104  
<211> 493  
<212> PRT  
<213> Homo sapiens

<400> 104  
Met Thr Ala Asn Gly Thr Ala Glu Ala Val Gln Ile Gln Phe Gly Leu  
1 5 10 15  
Ile Asn Cys Gly Asn Lys Tyr Leu Thr Ala Glu Ala Phe Gly Phe Lys  
20 25 30  
Val Asn Ala Ser Ala Ser Ser Leu Lys Lys Lys Gln Ile Trp Thr Leu  
35 40 45  
Glu Gln Pro Pro Asp Glu Ala Gly Ser Ala Ala Val Cys Leu Arg Ser  
50 55 60  
His Leu Gly Arg Tyr Leu Ala Ala Asp Lys Asp Gly Asn Val Thr Cys  
65 70 75 80  
Glu Arg Glu Val Pro Gly Pro Asp Cys Arg Phe Leu Ile Val Ala His  
85 90 95  
Asp Asp Gly Arg Trp Ser Leu Gln Ser Glu Ala His Arg Arg Tyr Phe  
100 105 110

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Gly | Thr | Glu | Asp | Arg | Leu | Ser | Cys | Phe | Ala | Gln | Thr | Val | Ser | Pro |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Ala | Glu | Lys | Trp | Ser | Val | His | Ile | Ala | Met | His | Pro | Gln | Val | Asn | Ile |
|     |     | 130 |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Tyr | Ser | Val | Thr | Arg | Lys | Arg | Tyr | Ala | His | Leu | Ser | Ala | Arg | Pro | Ala |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
| Asp | Glu | Ile | Ala | Val | Asp | Arg | Asp | Val | Pro | Trp | Gly | Val | Asp | Ser | Leu |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Ile | Thr | Leu | Ala | Phe | Gln | Asp | Gln | Arg | Tyr | Ser | Val | Gln | Thr | Ala | Asp |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| His | Arg | Phe | Leu | Arg | His | Asp | Gly | Arg | Leu | Val | Ala | Arg | Pro | Glu | Pro |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Ala | Thr | Gly | Tyr | Thr | Leu | Glu | Phe | Arg | Ser | Gly | Lys | Val | Ala | Phe | Arg |
|     |     | 210 |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Asp | Cys | Glu | Gly | Arg | Tyr | Leu | Ala | Pro | Ser | Gly | Pro | Ser | Gly | Thr | Leu |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Lys | Ala | Gly | Lys | Ala | Thr | Lys | Val | Gly | Lys | Asp | Glu | Leu | Phe | Ala | Leu |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Glu | Gln | Ser | Cys | Ala | Gln | Val | Val | Leu | Gln | Ala | Ala | Asn | Glu | Arg | Asn |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Val | Ser | Thr | Arg | Gln | Gly | Met | Asp | Leu | Ser | Ala | Asn | Gln | Asp | Glu | Glu |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Thr | Asp | Gln | Glu | Thr | Phe | Gln | Leu | Glu | Ile | Asp | Arg | Asp | Thr | Lys | Lys |
|     |     | 290 |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Cys | Ala | Phe | Arg | Thr | His | Thr | Gly | Lys | Tyr | Trp | Thr | Leu | Thr | Ala | Thr |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |
| Gly | Gly | Val | Gln | Ser | Thr | Ala | Ser | Ser | Lys | Asn | Ala | Ser | Cys | Tyr | Phe |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Asp | Ile | Glu | Trp | Arg | Asp | Arg | Arg | Ile | Thr | Leu | Arg | Ala | Ser | Asn | Gly |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Lys | Phe | Val | Thr | Ser | Lys | Lys | Asn | Gly | Gln | Leu | Ala | Ala | Ser | Val | Glu |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Thr | Ala | Gly | Asp | Ser | Glu | Leu | Phe | Leu | Met | Lys | Leu | Ile | Asn | Arg | Pro |
|     |     | 370 |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Ile | Ile | Val | Phe | Arg | Gly | Glu | His | Gly | Phe | Ile | Gly | Cys | Arg | Lys | Val |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Thr | Gly | Thr | Leu | Asp | Ala | Asn | Arg | Ser | Ser | Tyr | Asp | Val | Phe | Gln | Leu |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Glu | Phe | Asn | Asp | Gly | Ala | Tyr | Asn | Ile | Lys | Asp | Ser | Thr | Gly | Lys | Tyr |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Trp | Thr | Val | Gly | Ser | Asp | Ser | Ala | Val | Thr | Ser | Ser | Gly | Asp | Thr | Pro |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Val | Asp | Phe | Phe | Phe | Glu | Phe | Cys | Asp | Tyr | Asn | Lys | Val | Ala | Ile | Lys |
|     |     | 450 |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |
| Val | Gly | Gly | Arg | Tyr | Leu | Lys | Gly | Asp | His | Ala | Gly | Val | Leu | Lys | Ala |
| 465 |     |     |     |     | 470 |     |     |     | 475 |     |     |     |     |     | 480 |
| Ser | Ala | Glu | Thr | Val | Asp | Pro | Ala | Ser | Leu | Trp | Glu | Tyr |     |     |     |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     |     |     |

<210> 105  
 <211> 238  
 <212> PRT  
 <213> Homo sapiens

<400> 105  
 Met Leu Thr Thr Leu Leu Pro Ile Leu Leu Leu Ser Gly Trp Ala Phe  
 1 5 10 15  
 Cys Ser Gln Asp Ala Ser Asp Gly Leu Gln Arg Leu His Met Leu Gln  
 20 25 30  
 Ile Ser Tyr Phe Arg Asp Pro Tyr His Val Trp Tyr Gln Gly Asn Ala  
 35 40 45



|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Leu | Gly | Gly | His | Leu | Thr | His | Val | Leu | Glu | Gly | Pro | Asp | Thr | Asn |
| 50  |     |     |     |     |     | 55  |     |     |     | 60  |     |     |     |     |     |
| Thr | Thr | Ile | Ile | Gln | Leu | Gln | Pro | Leu | Gln | Glu | Pro | Glu | Ser | Trp | Ala |
| 65  |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     |     | 80  |
| Arg | Thr | Gln | Ser | Gly | Leu | Gln | Ser | Tyr | Leu | Leu | Gln | Phe | His | Gly | Leu |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     |     | 95  |     |
| Val | Arg | Leu | Val | His | Gln | Glu | Arg | Thr | Leu | Ala | Phe | Pro | Leu | Thr | Ile |
|     |     | 100 |     |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Arg | Cys | Phe | Leu | Gly | Cys | Glu | Leu | Pro | Pro | Glu | Gly | Ser | Arg | Ala | His |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Val | Phe | Phe | Glu | Val | Ala | Val | Asn | Gly | Ser | Ser | Phe | Val | Ser | Phe | Arg |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Pro | Glu | Arg | Ala | Leu | Trp | Gln | Ala | Asp | Thr | Gln | Val | Thr | Ser | Gly | Val |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
| Val | Thr | Phe | Thr | Leu | Gln | Gln | Leu | Asn | Ala | Tyr | Asn | Arg | Thr | Arg | Tyr |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |     |
| Glu | Leu | Arg | Glu | Phe | Leu | Glu | Asp | Thr | Cys | Val | Gln | Tyr | Val | Gln | Lys |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| His | Ile | Ser | Ala | Glu | Asn | Thr | Lys | Gly | Ser | Gln | Thr | Ser | Arg | Ser | Tyr |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Thr | Ser | Leu | Val | Leu | Gly | Val | Leu | Val | Gly | Gly | Phe | Ile | Ile | Ala | Gly |
|     |     | 210 |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Val | Ala | Val | Gly | Ile | Phe | Leu | Cys | Thr | Gly | Gly | Arg | Arg | Cys |     |     |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     |     |

<210> 106  
 <211> 646  
 <212> PRT  
 <213> Homo sapiens

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Leu | Pro | Arg | Leu | Val | Cys | Ala | Phe | Leu | Leu | Ala | Ala | Cys | Cys |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Cys | Cys | Pro | Arg | Val | Ala | Gly | Val | Pro | Gly | Glu | Ala | Glu | Gln | Pro | Ala |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Pro | Glu | Leu | Val | Glu | Val | Glu | Val | Gly | Ser | Thr | Ala | Leu | Leu | Lys | Cys |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Gly | Leu | Ser | Gln | Ser | Gln | Gly | Asn | Leu | Ser | His | Val | Asp | Trp | Phe | Ser |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Val | His | Lys | Glu | Lys | Arg | Thr | Leu | Ile | Phe | Arg | Val | Arg | Gln | Gly | Gln |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |
| Gly | Gln | Ser | Glu | Pro | Gly | Glu | Tyr | Glu | Gln | Arg | Leu | Ser | Leu | Gln | Asp |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     |     | 95  |     |
| Arg | Gly | Ala | Thr | Leu | Ala | Leu | Thr | Gln | Val | Thr | Pro | Gln | Asp | Glu | Arg |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Ile | Phe | Leu | Cys | Gln | Gly | Lys | Arg | Pro | Arg | Ser | Gln | Glu | Tyr | Arg | Ile |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Gln | Leu | Arg | Val | Tyr | Lys | Ala | Pro | Glu | Glu | Pro | Asn | Ile | Gln | Val | Asn |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Pro | Leu | Gly | Ile | Pro | Val | Asn | Ser | Lys | Glu | Pro | Glu | Glu | Val | Ala | Thr |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
| Cys | Val | Gly | Arg | Asn | Gly | Tyr | Pro | Ile | Pro | Gln | Val | Ile | Trp | Tyr | Lys |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |     |
| Asn | Gly | Arg | Pro | Leu | Lys | Glu | Glu | Lys | Asn | Arg | Val | His | Ile | Gln | Ser |
|     |     | 180 |     |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Ser | Gln | Thr | Val | Glu | Ser | Ser | Gly | Leu | Tyr | Thr | Leu | Gln | Ser | Ile | Leu |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Lys | Ala | Gln | Leu | Val | Lys | Glu | Asp | Lys | Asp | Ala | Gln | Phe | Tyr | Cys | Glu |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Leu | Asn | Tyr | Arg | Leu | Pro | Ser | Gly | Asn | His | Met | Lys | Glu | Ser | Arg | Glu |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |

Val Thr Val Pro Val Phe Tyr Pro Thr Glu Lys Val Trp Leu Glu Val  
 245 250 255  
 Glu Pro Val Gly Met Leu Lys Glu Gly Asp Arg Val Glu Ile Arg Cys  
 260 265 270  
 Leu Ala Asp Gly Asn Pro Pro Pro His Phe Ser Ile Ser Lys Gln Asn  
 275 280 285  
 Pro Ser Thr Arg Glu Ala Glu Glu Thr Thr Asn Asp Asn Gly Val  
 290 295 300  
 Leu Val Leu Glu Pro Ala Arg Lys Glu His Ser Gly Arg Tyr Glu Cys  
 305 310 315 320  
 Gln Ala Trp Asn Leu Asp Thr Met Ile Ser Leu Leu Ser Glu Pro Gln  
 325 330 335  
 Glu Leu Leu Val Asn Tyr Val Ser Asp Val Arg Val Ser Pro Ala Ala  
 340 345 350  
 Pro Glu Arg Gln Glu Gly Ser Ser Leu Thr Leu Thr Cys Glu Ala Glu  
 355 360 365  
 Ser Ser Gln Asp Leu Glu Phe Gln Trp Leu Arg Glu Thr Asp Gln  
 370 375 380  
 Val Leu Glu Arg Gly Pro Val Leu Gln Leu His Asp Leu Lys Arg Glu  
 385 390 395 400  
 Ala Gly Gly Gly Tyr Arg Cys Val Ala Ser Val Pro Ser Ile Pro Gly  
 405 410 415  
 Leu Asn Arg Thr Gln Leu Val Lys Leu Ala Ile Phe Gly Pro Pro Trp  
 420 425 430  
 Met Ala Phe Lys Glu Arg Lys Val Trp Val Lys Glu Asn Met Val Leu  
 435 440 445  
 Asn Leu Ser Cys Glu Ala Ser Gly His Pro Arg Pro Thr Ile Ser Trp  
 450 455 460  
 Asn Val Asn Gly Thr Ala Ser Glu Gln Asp Gln Asp Pro Gln Arg Val  
 465 470 475 480  
 Leu Ser Thr Leu Asn Val Leu Val Thr Pro Glu Leu Leu Glu Thr Gly  
 485 490 495  
 Val Glu Cys Thr Ala Ser Asn Asp Leu Gly Lys Asn Thr Ser Ile Leu  
 500 505 510  
 Phe Leu Glu Leu Val Asn Leu Thr Thr Leu Thr Pro Asp Ser Asn Thr  
 515 520 525  
 Thr Thr Gly Leu Ser Thr Ser Thr Ala Ser Pro His Thr Arg Ala Asn  
 530 535 540  
 Ser Thr Ser Thr Glu Arg Lys Leu Pro Glu Pro Glu Ser Arg Gly Val  
 545 550 555 560  
 Val Ile Val Ala Val Ile Val Cys Ile Leu Val Leu Ala Val Leu Gly  
 565 570 575  
 Ala Val Leu Tyr Phe Leu Tyr Lys Lys Gly Lys Leu Pro Cys Arg Arg  
 580 585 590  
 Ser Gly Lys Gln Glu Ile Thr Leu Pro Pro Ser Arg Lys Thr Glu Leu  
 595 600 605  
 Val Val Glu Val Lys Ser Asp Lys Leu Pro Glu Glu Met Gly Leu Leu  
 610 615 620  
 Gln Gly Ser Ser Gly Asp Lys Arg Ala Pro Gly Asp Gln Gly Glu Lys  
 625 630 635 640  
 Tyr Ile Asp Leu Arg His  
 645

&lt;210&gt; 107

&lt;211&gt; 212

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 107

Met Asp Tyr Leu Leu Met Ile Phe Ser Leu Leu Phe Val Ala Cys Gln  
 1 5 10 15

Gly Ala Pro Glu Thr Ala Val Leu Gly Ala Glu Leu Ser Ala Val Gly  
 20 25 30  
 Glu Asn Gly Gly Glu Lys Pro Thr Pro Ser Pro Pro Trp Arg Leu Arg  
 35 40 45  
 Arg Ser Lys Arg Cys Ser Cys Ser Ser Leu Met Asp Lys Glu Cys Val  
 50 55 60  
 Tyr Phe Cys His Leu Asp Ile Ile Trp Val Asn Thr Pro Glu His Val  
 65 70 75 80  
 Val Pro Tyr Gly Leu Gly Ser Pro Arg Ser Lys Arg Ala Leu Glu Asn  
 85 90 95  
 Leu Leu Pro Thr Lys Ala Thr Asp Arg Glu Asn Arg Cys Gln Cys Ala  
 100 105 110  
 Ser Gln Lys Asp Lys Lys Cys Trp Asn Phe Cys Gln Ala Gly Lys Glu  
 115 120 125  
 Leu Arg Ala Glu Asp Ile Met Glu Lys Asp Trp Asn Asn His Lys Lys  
 130 135 140  
 Gly Lys Asp Cys Ser Lys Leu Gly Lys Lys Cys Ile Tyr Gln Gln Leu  
 145 150 155 160  
 Val Arg Gly Arg Lys Ile Arg Arg Ser Ser Glu Glu His Leu Arg Gln  
 165 170 175  
 Thr Arg Ser Glu Thr Met Arg Asn Ser Val Lys Ser Ser Phe His Asp  
 180 185 190  
 Pro Lys Leu Lys Gly Lys Pro Ser Arg Glu Arg Tyr Val Thr His Asn  
 195 200 205  
 Arg Ala His Trp  
 210

<210> 108  
 <211> 675  
 <212> PRT  
 <213> Homo sapiens

<400> 108  
 Met Asp Thr Lys Ser Ile Leu Glu Glu Leu Leu Leu Lys Arg Ser Gln  
 1 5 10 15  
 Gln Lys Lys Lys Met Ser Pro Asn Asn Tyr Lys Glu Arg Leu Phe Val  
 20 25 30  
 Leu Thr Lys Thr Asn Leu Ser Tyr Tyr Glu Tyr Asp Lys Met Lys Arg  
 35 40 45  
 Gly Ser Arg Lys Gly Ser Ile Glu Ile Lys Lys Ile Arg Cys Val Glu  
 50 55 60  
 Lys Val Asn Leu Glu Glu Gln Thr Pro Val Glu Arg Gln Tyr Pro Phe  
 65 70 75 80  
 Gln Ile Val Tyr Lys Asp Gly Leu Leu Tyr Val Tyr Ala Ser Asn Glu  
 85 90 95  
 Glu Ser Arg Ser Gln Trp Leu Lys Ala Leu Gln Lys Glu Ile Arg Gly  
 100 105 110  
 Asn Pro His Leu Leu Val Lys Tyr His Ser Gly Phe Phe Val Asp Gly  
 115 120 125  
 Lys Phe Leu Cys Cys Gln Gln Ser Cys Lys Ala Ala Pro Gly Cys Thr  
 130 135 140  
 Leu Trp Glu Ala Tyr Ala Asn Leu His Thr Ala Val Asn Glu Glu Lys  
 145 150 155 160  
 His Arg Val Pro Thr Phe Pro Asp Arg Val Leu Lys Ile Pro Arg Ala  
 165 170 175  
 Val Pro Val Leu Lys Met Asp Ala Pro Ser Ser Ser Thr Thr Leu Ala  
 180 185 190  
 Gln Tyr Asp Asn Glu Ser Lys Lys Asn Tyr Gly Ser Gln Pro Pro Ser  
 195 200 205  
 Ser Ser Thr Ser Leu Ala Gln Tyr Asp Ser Asn Ser Lys Lys Ile Tyr  
 210 215 220

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ser | Gln | Pro | Asn | Phe | Asn | Met | Gln | Tyr | Ile | Pro | Arg | Glu | Asp | Phe |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Pro | Asp | Trp | Trp | Gln | Val | Arg | Lys | Leu | Lys | Ser | Ser | Ser | Ser | Ser | Glu |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Asp | Val | Ala | Ser | Ser | Asn | Gln | Lys | Glu | Arg | Asn | Val | Asn | His | Thr | Thr |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Ser | Lys | Ile | Ser | Trp | Glu | Phe | Pro | Glu | Ser | Ser | Ser | Ser | Glu | Glu | Glu |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Glu | Asn | Leu | Asp | Asp | Tyr | Asp | Trp | Phe | Ala | Gly | Asn | Ile | Ser | Arg | Ser |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Gln | Ser | Glu | Gln | Leu | Leu | Arg | Gln | Lys | Gly | Lys | Glu | Gly | Ala | Phe | Met |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |
| Val | Arg | Asn | Ser | Ser | Gln | Val | Gly | Met | Tyr | Thr | Val | Ser | Leu | Phe | Ser |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Lys | Ala | Val | Asn | Asp | Lys | Lys | Gly | Thr | Val | Lys | His | Tyr | His | Val | His |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Thr | Asn | Ala | Glu | Asn | Lys | Leu | Tyr | Leu | Ala | Glu | Asn | Tyr | Cys | Phe | Asp |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Ser | Ile | Pro | Lys | Leu | Ile | His | Tyr | His | Gln | His | Asn | Ser | Ala | Gly | Met |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Ile | Thr | Arg | Leu | Arg | His | Pro | Val | Ser | Thr | Lys | Ala | Asn | Lys | Val | Pro |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Asp | Ser | Val | Ser | Leu | Gly | Asn | Gly | Ile | Trp | Glu | Leu | Lys | Arg | Glu | Glu |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Ile | Thr | Leu | Leu | Lys | Glu | Leu | Gly | Ser | Gly | Gln | Phe | Gly | Val | Val | Gln |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Leu | Gly | Lys | Trp | Lys | Gly | Gln | Tyr | Asp | Val | Ala | Val | Lys | Met | Ile | Lys |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Glu | Gly | Ser | Met | Ser | Glu | Asp | Glu | Phe | Phe | Gln | Glu | Ala | Gln | Thr | Met |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |
| Met | Lys | Leu | Ser | His | Pro | Lys | Leu | Val | Lys | Phe | Tyr | Gly | Val | Cys | Ser |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |
| Lys | Glu | Tyr | Pro | Ile | Tyr | Ile | Val | Thr | Glu | Tyr | Ile | Ser | Asn | Gly | Cys |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |
| Leu | Leu | Asn | Tyr | Leu | Arg | Ser | His | Gly | Lys | Gly | Leu | Glu | Pro | Ser | Gln |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |
| Leu | Leu | Glu | Met | Cys | Tyr | Asp | Val | Cys | Glu | Gly | Met | Ala | Phe | Leu | Glu |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |
| Ser | His | Gln | Phe | Ile | His | Arg | Asp | Leu | Ala | Ala | Arg | Asn | Cys | Leu | Val |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |
| Asp | Arg | Asp | Leu | Cys | Val | Lys | Val | Ser | Asp | Phe | Gly | Met | Thr | Arg | Tyr |
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |
| Val | Leu | Asp | Asp | Gln | Tyr | Val | Ser | Ser | Val | Gly | Thr | Lys | Phe | Pro | Val |
|     |     |     |     | 565 |     |     |     |     | 570 |     |     |     |     | 575 |     |
| Lys | Trp | Ser | Ala | Pro | Glu | Val | Phe | His | Tyr | Phe | Lys | Tyr | Ser | Ser | Lys |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |
| Ser | Asp | Val | Trp | Ala | Phe | Gly | Ile | Leu | Met | Trp | Glu | Val | Phe | Ser | Leu |
|     |     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |
| Gly | Lys | Gln | Pro | Tyr | Asp | Leu | Tyr | Asp | Asn | Ser | Gln | Val | Val | Leu | Lys |
|     | 610 |     |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |
| Val | Ser | Gln | Gly | His | Arg | Leu | Tyr | Arg | Pro | His | Leu | Ala | Ser | Asp | Thr |
| 625 |     |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     | 640 |
| Ile | Tyr | Gln | Ile | Met | Tyr | Ser | Cys | Trp | His | Glu | Leu | Pro | Glu | Lys | Arg |
|     |     |     |     | 645 |     |     |     |     | 650 |     |     |     |     | 655 |     |
| Pro | Thr | Phe | Gln | Leu | Leu | Ser | Ser | Ile | Glu | Pro | Leu | Arg | Glu | Lys |     |
|     |     |     | 660 |     |     |     | 665 |     |     |     |     | 670 |     |     |     |
| Asp | Lys | His |     |     |     |     |     |     |     |     |     |     |     |     |     |
|     |     | 675 |     |     |     |     |     |     |     |     |     |     |     |     |     |

<210> 109  
 <211> 604  
 <212> PRT  
 <213> Homo sapiens

<400> 109  
 Met Leu Ala Arg Ala Leu Leu Leu Cys Ala Val Leu Ala Leu Ser His  
 1 5 10 15  
 Thr Ala Asn Pro Cys Cys Ser His Pro Cys Gln Asn Arg Gly Val Cys  
 20 25 30  
 Met Ser Val Gly Phe Asp Gln Tyr Lys Cys Asp Cys Thr Arg Thr Gly  
 35 40 45  
 Phe Tyr Gly Glu Asn Cys Ser Thr Pro Glu Phe Leu Thr Arg Ile Lys  
 50 55 60  
 Leu Phe Leu Lys Pro Thr Pro Asn Thr Val His Tyr Ile Leu Thr His  
 65 70 75 80  
 Phe Lys Gly Phe Trp Asn Val Val Asn Asn Ile Pro Phe Leu Arg Asn  
 85 90 95  
 Ala Ile Met Ser Tyr Val Leu Thr Ser Arg Ser His Leu Ile Asp Ser  
 100 105 110  
 Pro Pro Thr Tyr Asn Ala Asp Tyr Gly Tyr Lys Ser Trp Glu Ala Phe  
 115 120 125  
 Ser Asn Leu Ser Tyr Tyr Thr Arg Ala Leu Pro Pro Val Pro Asp Asp  
 130 135 140  
 Cys Pro Thr Pro Leu Gly Val Lys Gly Lys Lys Gln Leu Pro Asp Ser  
 145 150 155 160  
 Asn Glu Ile Val Glu Lys Leu Leu Leu Arg Arg Lys Phe Ile Pro Asp  
 165 170 175  
 Pro Gln Gly Ser Asn Met Met Phe Ala Phe Phe Ala Gln His Phe Thr  
 180 185 190  
 His Gln Phe Phe Lys Thr Asp His Lys Arg Gly Pro Ala Phe Thr Asn  
 195 200 205  
 Gly Leu Gly His Gly Val Asp Leu Asn His Ile Tyr Gly Glu Thr Leu  
 210 215 220  
 Ala Arg Gln Arg Lys Leu Arg Leu Phe Lys Asp Gly Lys Met Lys Tyr  
 225 230 235 240  
 Gln Ile Ile Asp Gly Glu Met Tyr Pro Pro Thr Val Lys Asp Thr Gln  
 245 250 255  
 Ala Glu Met Ile Tyr Pro Pro Gln Val Pro Glu His Leu Arg Phe Ala  
 260 265 270  
 Val Gly Gln Glu Val Phe Gly Leu Val Pro Gly Leu Met Met Tyr Ala  
 275 280 285  
 Thr Ile Trp Leu Arg Glu His Asn Arg Val Cys Asp Val Leu Lys Gln  
 290 295 300  
 Glu His Pro Glu Trp Gly Asp Glu Gln Leu Phe Gln Thr Ser Arg Leu  
 305 310 315 320  
 Ile Leu Ile Gly Glu Thr Ile Lys Ile Val Ile Glu Asp Tyr Val Gln  
 325 330 335  
 His Leu Ser Gly Tyr His Phe Lys Leu Lys Phe Asp Pro Glu Leu Leu  
 340 345 350  
 Phe Asn Lys Gln Phe Gln Tyr Gln Asn Arg Ile Ala Ala Glu Phe Asn  
 355 360 365  
 Thr Leu Tyr His Trp His Pro Leu Leu Pro Asp Thr Phe Gln Ile His  
 370 375 380  
 Asp Gln Lys Tyr Asn Tyr Gln Gln Phe Ile Tyr Asn Asn Ser Ile Leu  
 385 390 395 400  
 Leu Glu His Gly Ile Thr Gln Phe Val Glu Ser Phe Thr Arg Gln Ile  
 405 410 415  
 Ala Gly Arg Val Ala Gly Gly Arg Asn Val Pro Pro Ala Val Gln Lys  
 420 425 430

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Val Ser Gln Ala Ser Ile Asp Gln Ser Arg Gln Met Lys Tyr Gln Ser  
 435 440 445  
 Phe Asn Glu Tyr Arg Lys Arg Phe Met Leu Lys Pro Tyr Glu Ser Phe  
 450 455 460  
 Glu Glu Leu Thr Gly Glu Lys Glu Met Ser Ala Glu Leu Glu Ala Leu  
 465 470 475 480  
 Tyr Gly Asp Ile Asp Ala Val Glu Leu Tyr Pro Ala Leu Leu Val Glu  
 485 490 495  
 Lys Pro Arg Pro Asp Ala Ile Phe Gly Glu Thr Met Val Glu Val Gly  
 500 505 510  
 Ala Pro Phe Ser Leu Lys Gly Leu Met Gly Asn Val Ile Cys Ser Pro  
 515 520 525  
 Ala Tyr Trp Lys Pro Ser Thr Phe Gly Gly Glu Val Gly Phe Gln Ile  
 530 535 540  
 Ile Asn Thr Ala Ser Ile Gln Ser Leu Ile Cys Asn Asn Val Lys Gly  
 545 550 555 560  
 Cys Pro Phe Thr Ser Phe Ser Val Pro Asp Pro Glu Leu Ile Lys Thr  
 565 570 575  
 Val Thr Ile Asn Ala Ser Ser Ser Arg Ser Gly Leu Asp Asp Ile Asn  
 580 585 590  
 Pro Thr Val Leu Leu Lys Glu Arg Ser Thr Glu Leu  
 595 600

<210> 110  
 <211> 715  
 <212> PRT  
 <213> Homo sapiens

<400> 110  
 Met Val Gln Lys Tyr Gln Ser Pro Val Arg Val Tyr Lys Tyr Pro Phe  
 1 5 10 15  
 Glu Leu Ile Met Ala Ala Tyr Glu Arg Phe Pro Thr Cys Pro Leu  
 20 25 30  
 Ile Pro Met Phe Val Gly Ser Asp Thr Val Ser Glu Phe Lys Ser Glu  
 35 40 45  
 Asp Gly Ala Ile His Val Ile Glu Arg Arg Cys Lys Leu Asp Val Asp  
 50 55 60  
 Ala Pro Arg Leu Leu Lys Lys Ile Ala Gly Val Asp Tyr Val Tyr Phe  
 65 70 75 80  
 Val Gln Lys Asn Ser Leu Asn Ser Arg Glu Arg Thr Leu His Ile Glu  
 85 90 95  
 Ala Tyr Asn Glu Thr Phe Ser Asn Arg Val Ile Ile Asn Glu His Cys  
 100 105 110  
 Cys Tyr Thr Val His Pro Glu Asn Glu Asp Trp Thr Cys Phe Glu Gln  
 115 120 125  
 Ser Ala Ser Leu Asp Ile Lys Ser Phe Phe Gly Phe Glu Ser Thr Val  
 130 135 140  
 Glu Lys Ile Ala Met Lys Gln Tyr Thr Ser Asn Ile Lys Lys Gly Lys  
 145 150 155 160  
 Glu Ile Ile Glu Tyr Tyr Leu Arg Gln Leu Glu Glu Glu Gly Ile Thr  
 165 170 175  
 Phe Val Pro Arg Trp Ser Pro Pro Ser Ile Thr Pro Ser Ser Glu Thr  
 180 185 190  
 Ser Ser Ser Ser Ser Lys Lys Gln Ala Ala Ser Met Ala Val Val Ile  
 195 200 205  
 Pro Glu Ala Ala Leu Lys Glu Gly Leu Ser Gly Asp Ala Leu Ser Ser  
 210 215 220  
 Pro Ser Ala Pro Glu Pro Val Val Gly Thr Pro Asp Asp Lys Leu Asp  
 225 230 235 240  
 Ala Asp His Ile Lys Arg Tyr Leu Gly Asp Leu Thr Pro Leu Gln Glu  
 245 250 255

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|
| Ser | Cys | Leu | Ile | Arg | Leu | Arg | Gln | Trp | Leu | Gln | Glu | Thr | His | Lys | Gly |  |  |  |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |  |  |  |
| Lys | Ile | Pro | Lys | Asp | Glu | His | Ile | Leu | Arg | Phe | Leu | Arg | Ala | Arg | Asp |  |  |  |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |  |  |  |
| Phe | Asn | Ile | Asp | Lys | Ala | Arg | Glu | Ile | Met | Cys | Gln | Ser | Leu | Thr | Trp |  |  |  |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |  |  |  |
| Arg | Lys | Gln | His | Gln | Val | Asp | Tyr | Ile | Leu | Glu | Thr | Trp | Thr | Pro | Pro |  |  |  |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |  |  |  |
| Gln | Val | Leu | Gln | Asp | Tyr | Tyr | Ala | Gly | Gly | Trp | His | His | His | Asp | Lys |  |  |  |
|     |     |     | 325 |     |     |     |     | 330 |     |     |     |     |     | 335 |     |  |  |  |
| Asp | Gly | Arg | Pro | Leu | Tyr | Val | Leu | Arg | Leu | Gly | Gln | Met | Asp | Thr | Lys |  |  |  |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |  |  |  |
| Gly | Leu | Val | Arg | Ala | Leu | Gly | Glu | Glu | Ala | Leu | Leu | Arg | Tyr | Val | Leu |  |  |  |
|     | 355 |     |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |  |  |  |
| Ser | Val | Asn | Glu | Glu | Arg | Leu | Arg | Arg | Cys | Glu | Glu | Asn | Thr | Lys | Val |  |  |  |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |  |  |  |
| Phe | Gly | Arg | Pro | Ile | Ser | Ser | Trp | Thr | Cys | Leu | Val | Asp | Leu | Glu | Gly |  |  |  |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |  |  |  |
| Leu | Asn | Met | Arg | His | Leu | Trp | Arg | Pro | Gly | Val | Lys | Ala | Leu | Leu | Arg |  |  |  |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |  |  |  |
| Ile | Ile | Glu | Val | Val | Glu | Ala | Asn | Tyr | Pro | Glu | Thr | Leu | Gly | Arg | Leu |  |  |  |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |  |  |  |
| Leu | Ile | Leu | Arg | Ala | Pro | Arg | Val | Phe | Pro | Val | Leu | Trp | Thr | Leu | Val |  |  |  |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |  |  |  |
| Ser | Pro | Phe | Ile | Asp | Asp | Asn | Thr | Arg | Arg | Lys | Phe | Leu | Ile | Tyr | Ala |  |  |  |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |  |  |  |
| Gly | Asn | Asp | Tyr | Gln | Gly | Pro | Gly | Gly | Leu | Leu | Asp | Tyr | Ile | Asp | Lys |  |  |  |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |  |  |  |
| Glu | Ile | Ile | Pro | Asp | Phe | Leu | Ser | Gly | Glu | Cys | Met | Cys | Glu | Val | Pro |  |  |  |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     | 495 |     |     |  |  |  |
| Glu | Gly | Gly | Leu | Val | Pro | Lys | Ser | Leu | Tyr | Arg | Thr | Ala | Glu | Glu | Leu |  |  |  |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |  |  |  |
| Glu | Asn | Glu | Asp | Leu | Lys | Leu | Trp | Thr | Glu | Thr | Ile | Tyr | Gln | Ser | Ala |  |  |  |
|     | 515 |     |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |  |  |  |
| Ser | Val | Phe | Lys | Gly | Ala | Pro | His | Glu | Ile | Leu | Ile | Gln | Ile | Val | Asp |  |  |  |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |  |  |  |
| Ala | Ser | Ser | Val | Ile | Thr | Trp | Asp | Phe | Asp | Val | Cys | Lys | Gly | Asp | Ile |  |  |  |
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |  |  |  |
| Val | Phe | Asn | Ile | Tyr | His | Ser | Lys | Arg | Ser | Pro | Gln | Pro | Pro | Lys | Lys |  |  |  |
|     |     |     |     | 565 |     |     |     |     | 570 |     |     |     |     | 575 |     |  |  |  |
| Asp | Ser | Leu | Gly | Ala | His | Ser | Ile | Thr | Ser | Pro | Gly | Gly | Asn | Asn | Val |  |  |  |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |  |  |  |
| Gln | Leu | Ile | Asp | Lys | Val | Trp | Gln | Leu | Gly | Arg | Asp | Tyr | Ser | Met | Val |  |  |  |
|     | 595 |     |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |  |  |  |
| Glu | Ser | Pro | Leu | Ile | Cys | Lys | Glu | Gly | Glu | Ser | Val | Gln | Gly | Ser | His |  |  |  |
|     | 610 |     |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |  |  |  |
| Val | Thr | Arg | Trp | Pro | Gly | Phe | Tyr | Ile | Leu | Gln | Trp | Lys | Phe | His | Ser |  |  |  |
| 625 |     |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     | 640 |  |  |  |
| Met | Pro | Ala | Cys | Ala | Ala | Ser | Ser | Leu | Pro | Arg | Val | Asp | Asp | Val | Leu |  |  |  |
|     |     |     |     | 645 |     |     |     |     | 650 |     |     |     |     | 655 |     |  |  |  |
| Ala | Ser | Leu | Gln | Val | Ser | Ser | His | Lys | Cys | Lys | Val | Met | Tyr | Tyr | Thr |  |  |  |
|     |     |     |     | 660 |     |     |     | 665 |     |     |     |     | 670 |     |     |  |  |  |
| Glu | Val | Ile | Gly | Ser | Glu | Asp | Phe | Arg | Gly | Ser | Met | Thr | Ser | Leu | Glu |  |  |  |
|     | 675 |     |     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |  |  |  |
| Ser | Ser | His | Ser | Gly | Phe | Ser | Gln | Leu | Ser | Ala | Ala | Thr | Thr | Ser | Ser |  |  |  |
|     | 690 |     |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     |  |  |  |
| Ser | Gln | Ser | His | Ser | Ser | Ser | Met | Ile | Ser | Arg |     |     |     |     |     |  |  |  |
| 705 |     |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     |     |  |  |  |

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 <212> PRT  
 <213> Homo sapiens

<400> 111

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Pro | Ser | Ser | Pro | Arg | Pro | Ala | Leu | Pro | Ala | Leu | Leu | Val | Leu |
| 1   |     |     | 5   |     |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Leu | Gly | Ala | Leu | Phe | Pro | Gly | Pro | Gly | Asn | Ala | Gln | Thr | Ser | Val | Ser |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Pro | Ser | Lys | Val | Ile | Leu | Pro | Arg | Gly | Gly | Ser | Val | Leu | Val | Thr | Cys |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Ser | Thr | Ser | Cys | Asp | Gln | Pro | Lys | Leu | Leu | Gly | Ile | Glu | Thr | Pro | Leu |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Pro | Lys | Lys | Glu | Leu | Leu | Leu | Pro | Gly | Asn | Asn | Arg | Lys | Val | Tyr | Glu |
| 65  |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     |     | 80  |
| Leu | Ser | Asn | Val | Gln | Glu | Asp | Ser | Gln | Pro | Met | Cys | Tyr | Ser | Asn | Cys |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Pro | Asp | Gly | Gln | Ser | Thr | Ala | Lys | Thr | Phe | Leu | Thr | Val | Tyr | Trp | Thr |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Pro | Glu | Arg | Val | Glu | Leu | Ala | Pro | Leu | Pro | Ser | Trp | Gln | Pro | Val | Gly |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Lys | Asn | Leu | Thr | Leu | Arg | Cys | Gln | Val | Glu | Gly | Gly | Ala | Pro | Arg | Ala |
|     | 130 |     |     |     |     | 135 |     |     |     |     |     | 140 |     |     |     |
| Asn | Leu | Thr | Val | Val | Leu | Leu | Arg | Gly | Glu | Lys | Glu | Leu | Lys | Arg | Glu |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
| Pro | Ala | Val | Gly | Glu | Pro | Ala | Glu | Val | Thr | Thr | Thr | Val | Leu | Val | Arg |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Arg | Asp | His | His | Gly | Ala | Asn | Phe | Ser | Cys | Arg | Thr | Glu | Leu | Asp | Leu |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Arg | Pro | Gln | Gly | Leu | Glu | Leu | Phe | Glu | Asn | Thr | Ser | Ala | Pro | Tyr | Gln |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Leu | Gln | Thr | Phe | Val | Leu | Pro | Ala | Thr | Pro | Pro | Gln | Leu | Val | Ser | Pro |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Arg | Val | Leu | Glu | Val | Asp | Thr | Gln | Gly | Thr | Val | Val | Cys | Ser | Leu | Asp |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Gly | Leu | Phe | Pro | Val | Ser | Glu | Ala | Gln | Val | His | Leu | Ala | Leu | Gly | Asp |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Gln | Arg | Leu | Asn | Pro | Thr | Val | Thr | Tyr | Gly | Asn | Asp | Ser | Phe | Ser | Ala |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Lys | Ala | Ser | Val | Ser | Val | Thr | Ala | Glu | Asp | Glu | Gly | Thr | Gln | Arg | Leu |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Thr | Cys | Ala | Val | Ile | Leu | Gly | Asn | Gln | Ser | Gln | Glu | Thr | Leu | Gln | Thr |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Val | Thr | Ile | Tyr | Ser | Phe | Pro | Ala | Pro | Asn | Val | Ile | Leu | Thr | Lys | Pro |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |
| Glu | Val | Ser | Glu | Gly | Thr | Glu | Val | Thr | Val | Lys | Cys | Glu | Ala | His | Pro |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Arg | Ala | Lys | Val | Thr | Leu | Asn | Gly | Val | Pro | Ala | Gln | Pro | Leu | Gly | Pro |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Arg | Ala | Gln | Leu | Leu | Leu | Lys | Ala | Thr | Pro | Glu | Asp | Asn | Gly | Arg | Ser |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Phe | Ser | Cys | Ser | Ala | Thr | Leu | Glu | Val | Ala | Gly | Gln | Leu | Ile | His | Lys |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Asn | Gln | Thr | Arg | Glu | Leu | Arg | Val | Leu | Tyr | Gly | Pro | Arg | Leu | Asp | Glu |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Arg | Asp | Cys | Pro | Gly | Asn | Trp | Thr | Trp | Pro | Glu | Asn | Ser | Gln | Gln | Thr |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Pro | Met | Cys | Gln | Ala | Trp | Gly | Asn | Pro | Leu | Pro | Glu | Leu | Lys | Cys | Leu |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |



Lys Asp Gly Thr Phe Pro Leu Pro Ile Gly Glu Ser Val Thr Val Thr  
 435 440 445  
 Arg Asp Leu Glu Gly Thr Tyr Leu Cys Arg Ala Arg Ser Thr Gln Gly  
 450 455 460  
 Glu Val Thr Arg Glu Val Thr Val Asn Val Leu Ser Pro Arg Tyr Glu  
 465 470 475 480  
 Ile Val Ile Ile Thr Val Val Ala Ala Ala Val Ile Met Gly Thr Ala  
 485 490 495  
 Gly Leu Ser Thr Tyr Leu Tyr Asn Arg Gln Arg Lys Ile Lys Lys Tyr  
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 Arg Leu Gln Gln Ala Gln Lys Gly Thr Pro Met Lys Pro Asn Thr Gln  
 515 520 525  
 Ala Thr Pro Pro  
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<400> 112  
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 Pro Leu Val Ser Asp Ala Glu Thr Ser Leu Thr Cys Ile Ala Ser Gly  
 35 40 45  
 Trp Arg Pro His Glu Pro Ile Thr Ile Gly Arg Asp Phe Glu Ala Leu  
 50 55 60  
 Met Asn Gln His Gln Asp Pro Leu Glu Val Thr Gln Asp Val Thr Arg  
 65 70 75 80  
 Glu Trp Ala Lys Lys Val Val Trp Lys Arg Glu Lys Ala Ser Lys Ile  
 85 90 95  
 Asn Gly Ala Tyr Phe Cys Glu Gly Arg Val Arg Gly Glu Ala Ile Arg  
 100 105 110  
 Ile Arg Thr Met Lys Met Arg Gln Gln Ala Ser Phe Leu Pro Ala Thr  
 115 120 125  
 Leu Thr Met Thr Val Asp Lys Gly Asp Asn Val Asn Ile Ser Phe Lys  
 130 135 140  
 Lys Val Leu Ile Lys Glu Asp Ala Val Ile Tyr Lys Asn Gly Ser  
 145 150 155 160  
 Phe Ile His Ser Val Pro Arg His Glu Val Pro Asp Ile Leu Glu Val  
 165 170 175  
 His Leu Pro His Ala Gln Pro Gln Asp Ala Gly Val Tyr Ser Ala Arg  
 180 185 190  
 Tyr Ile Gly Gly Asn Leu Phe Thr Ser Ala Phe Thr Arg Leu Ile Val  
 195 200 205  
 Arg Arg Cys Glu Ala Gln Lys Trp Gly Pro Glu Cys Asn His Leu Cys  
 210 215 220  
 Thr Ala Cys Met Asn Asn Gly Val Cys His Glu Asp Thr Gly Glu Cys  
 225 230 235 240  
 Ile Cys Pro Pro Gly Phe Met Gly Arg Thr Cys Glu Lys Ala Cys Glu  
 245 250 255  
 Leu His Thr Phe Gly Arg Thr Cys Lys Glu Arg Cys Ser Gly Gln Glu  
 260 265 270  
 Gly Cys Lys Ser Tyr Val Phe Cys Leu Pro Asp Pro Tyr Gly Cys Ser  
 275 280 285  
 Cys Ala Thr Gly Trp Lys Gly Leu Gln Cys Asn Glu Ala Cys His Pro  
 290 295 300  
 Gly Phe Tyr Gly Pro Asp Cys Lys Leu Arg Cys Ser Cys Asn Asn Gly  
 305 310 315 320

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Glu | Met | Cys | Asp | Arg | Phe | Gln | Gly | Cys | Leu | Cys | Ser | Pro | Gly | Trp | Gln |  |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |  |
| Gly | Leu | Gln | Cys | Glu | Arg | Glu | Gly | Ile | Pro | Arg | Met | Thr | Pro | Lys | Ile |  |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |  |
| Val | Asp | Leu | Pro | Asp | His | Ile | Glu | Val | Asn | Ser | Gly | Lys | Phe | Asn | Pro |  |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |  |
| Ile | Cys | Lys | Ala | Ser | Gly | Trp | Pro | Leu | Pro | Thr | Asn | Glu | Glu | Met | Thr |  |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |  |
| Leu | Val | Lys | Pro | Asp | Gly | Thr | Val | Leu | His | Pro | Lys | Asp | Phe | Asn | His |  |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |  |
| Thr | Asp | His | Phe | Ser | Val | Ala | Ile | Phe | Thr | Ile | His | Arg | Ile | Leu | Pro |  |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |  |
| Pro | Asp | Ser | Gly | Val | Trp | Val | Cys | Ser | Val | Asn | Thr | Val | Ala | Gly | Met |  |
|     |     |     | 420 |     |     |     | 425 |     |     |     |     |     | 430 |     |     |  |
| Val | Glu | Lys | Pro | Phe | Asn | Ile | Ser | Val | Lys | Val | Leu | Pro | Lys | Pro | Leu |  |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |  |
| Asn | Ala | Pro | Asn | Val | Ile | Asp | Thr | Gly | His | Asn | Phe | Ala | Val | Ile | Asn |  |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |  |
| Ile | Ser | Ser | Glu | Pro | Tyr | Phe | Gly | Asp | Gly | Pro | Ile | Lys | Ser | Lys | Lys |  |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |  |
| Leu | Leu | Tyr | Lys | Pro | Val | Asn | His | Tyr | Glu | Ala | Trp | Gln | His | Ile | Gln |  |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |  |
| Val | Thr | Asn | Glu | Ile | Val | Thr | Leu | Asn | Tyr | Leu | Glu | Pro | Arg | Thr | Glu |  |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |  |
| Tyr | Glu | Leu | Cys | Val | Gln | Leu | Val | Arg | Arg | Gly | Glu | Gly | Gly | Glu | Gly |  |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |  |
| His | Pro | Gly | Pro | Val | Arg | Arg | Phe | Thr | Thr | Ala | Ser | Ile | Gly | Leu | Pro |  |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |  |
| Pro | Pro | Arg | Gly | Leu | Asn | Leu | Leu | Pro | Lys | Ser | Gln | Thr | Thr | Leu | Asn |  |
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |  |
| Leu | Thr | Trp | Gln | Pro | Ile | Phe | Pro | Ser | Ser | Glu | Asp | Asp | Phe | Tyr | Val |  |
|     |     |     |     | 565 |     |     |     |     | 570 |     |     |     |     | 575 |     |  |
| Glu | Val | Glu | Arg | Arg | Ser | Val | Gln | Lys | Ser | Asp | Gln | Gln | Asn | Ile | Lys |  |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |  |
| Val | Pro | Gly | Asn | Leu | Thr | Ser | Val | Leu | Leu | Asn | Asn | Leu | His | Pro | Arg |  |
|     |     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |  |
| Glu | Gln | Tyr | Val | Val | Arg | Ala | Arg | Val | Asn | Thr | Lys | Ala | Gln | Gly | Glu |  |
|     | 610 |     |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |  |
| Trp | Ser | Glu | Asp | Leu | Thr | Ala | Trp | Thr | Leu | Ser | Asp | Ile | Leu | Pro | Pro |  |
| 625 |     |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     | 640 |  |
| Gln | Pro | Glu | Asn | Ile | Lys | Ile | Ser | Asn | Ile | Thr | His | Ser | Ser | Ala | Val |  |
|     |     |     |     | 645 |     |     |     |     | 650 |     |     |     |     | 655 |     |  |
| Ile | Ser | Trp | Thr | Ile | Leu | Asp | Gly | Tyr | Ser | Ile | Ser | Ser | Ile | Thr | Ile |  |
|     |     |     | 660 |     |     |     |     | 665 |     |     |     |     | 670 |     |     |  |
| Arg | Tyr | Lys | Val | Gln | Gly | Lys | Asn | Glu | Asp | Gln | His | Val | Asp | Val | Lys |  |
|     |     | 675 |     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |  |
| Ile | Lys | Asn | Ala | Thr | Ile | Ile | Gln | Tyr | Gln | Leu | Lys | Gly | Leu | Glu | Pro |  |
|     | 690 |     |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     |  |
| Glu | Thr | Ala | Tyr | Gln | Val | Asp | Ile | Phe | Ala | Glu | Asn | Asn | Ile | Gly | Ser |  |
| 705 |     |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     | 720 |  |
| Ser | Asn | Pro | Ala | Phe | Ser | His | Glu | Leu | Val | Thr | Leu | Pro | Glu | Ser | Gln |  |
|     |     |     |     | 725 |     |     |     |     | 730 |     |     |     |     | 735 |     |  |
| Ala | Pro | Ala | Asp | Leu | Gly | Gly | Gly | Lys | Met | Leu | Leu | Ile | Ala | Ile | Leu |  |
|     |     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |     |     |  |
| Gly | Ser | Ala | Gly | Met | Thr | Cys | Leu | Thr | Val | Leu | Leu | Ala | Phe | Leu | Ile |  |
|     |     | 755 |     |     |     |     |     | 760 |     |     |     |     | 765 |     |     |  |
| Ile | Leu | Gln | Leu | Lys | Arg | Ala | Asn | Val | Gln | Arg | Arg | Met | Ala | Gln | Ala |  |
|     | 770 |     |     |     |     | 775 |     |     |     |     | 780 |     |     |     |     |  |
| Phe | Gln | Asn | Val | Arg | Glu | Glu | Pro | Ala | Val | Gln | Phe | Asn | Ser | Gly | Thr |  |
| 785 |     |     |     |     | 790 |     |     |     |     | 795 |     |     |     |     | 800 |  |

Leu Ala Leu Asn Arg Lys Val Lys Asn Asn Pro Asp Pro Thr Ile Tyr  
805 810 815  
Pro Val Leu Asp Trp Asn Asp Ile Lys Phe Gln Asp Val Ile Gly Glu  
820 825 830  
Gly Asn Phe Gly Gln Val Leu Lys Ala Arg Ile Lys Lys Asp Gly Leu  
835 840 845  
Arg Met Asp Ala Ala Ile Lys Arg Met Lys Glu Tyr Ala Ser Lys Asp  
850 855 860  
Asp His Arg Asp Phe Ala Gly Glu Leu Glu Val Leu Cys Lys Leu Gly  
865 870 875 880  
His His Pro Asn Ile Ile Asn Leu Leu Gly Ala Cys Glu His Arg Gly  
885 890 895  
Tyr Leu Tyr Leu Ala Ile Glu Tyr Ala Pro His Gly Asn Leu Leu Asp  
900 905 910  
Phe Leu Arg Lys Ser Arg Val Leu Glu Thr Asp Pro Ala Phe Ala Ile  
915 920 925  
Ala Asn Ser Thr Ala Ser Thr Leu Ser Ser Gln Gln Leu Leu His Phe  
930 935 940  
Ala Ala Asp Val Ala Arg Gly Met Asp Tyr Leu Ser Gln Lys Gln Phe  
945 950 955 960  
Ile His Arg Asp Leu Ala Ala Arg Asn Ile Leu Val Gly Glu Asn Tyr  
965 970 975  
Val Ala Lys Ile Ala Asp Phe Gly Leu Ser Arg Gly Gln Glu Val Tyr  
980 985 990  
Val Lys Lys Thr Met Gly Arg Leu Pro Val Arg Trp Met Ala Ile Glu  
995 1000 1005  
Ser Leu Asn Tyr Ser Val Tyr Thr Thr Asn Ser Asp Val Trp Ser Tyr  
1010 1015 1020  
Gly Val Leu Leu Trp Glu Ile Val Ser Leu Gly Gly Thr Pro Tyr Cys  
1025 1030 1035 1040  
Gly Met Thr Cys Ala Glu Leu Tyr Glu Lys Leu Pro Gln Gly Tyr Arg  
1045 1050 1055  
Leu Glu Lys Pro Leu Asn Cys Asp Asp Glu Val Tyr Asp Leu Met Arg  
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Gln Cys Trp Arg Glu Lys Pro Tyr Glu Arg Pro Ser Phe Ala Gln Ile  
1075 1080 1085  
Leu Val Ser Leu Asn Arg Met Leu Glu Glu Arg Lys Thr Tyr Val Asn  
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Thr Thr Leu Tyr Glu Lys Phe Thr Tyr Ala Gly Ile Asp Cys Ser Ala  
1105 1110 1115 1120  
Glu Glu Ala Ala

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<400> 113  
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Ala Glu Ala Ser Arg Ala Ser Phe Pro Gly Pro Ser Glu Leu His Ser  
35 40 45  
Glu Asp Ser Arg Phe Arg Glu Leu Arg Lys Arg Tyr Glu Asp Leu Leu  
50 55 60  
Thr Arg Leu Arg Ala Asn Gln Ser Trp Glu Asp Ser Asn Thr Asp Leu  
65 70 75 80  
Val Pro Ala Pro Ala Val Arg Ile Leu Thr Pro Glu Val Arg Leu Gly  
85 90 95

Ser Gly Gly His Leu His Leu Arg Ile Ser Arg Ala Ala Leu Pro Glu  
100 105 110  
Gly Leu Pro Glu Ala Ser Arg Leu His Arg Ala Leu Phe Arg Leu Ser  
115 120 125  
Pro Thr Ala Ser Arg Ser Trp Asp Val Thr Arg Pro Leu Arg Arg Gln  
130 135 140  
Leu Ser Leu Ala Arg Pro Gln Ala Pro Ala Leu His Leu Arg Leu Ser  
145 150 155 160  
Pro Pro Pro Ser Gln Ser Asp Gln Leu Leu Ala Glu Ser Ser Ser Ala  
165 170 175  
Arg Pro Gln Leu Glu Leu His Leu Arg Pro Gln Ala Ala Arg Gly Arg  
180 185 190  
Arg Arg Ala Arg Ala Arg Asn Gly Asp Asp Cys Pro Leu Gly Pro Gly  
195 200 205  
Arg Cys Cys Arg Leu His Thr Val Arg Ala Ser Leu Glu Asp Leu Gly  
210 215 220  
Trp Ala Asp Trp Val Leu Ser Pro Arg Glu Val Gln Val Thr Met Cys  
225 230 235 240  
Ile Gly Ala Cys Pro Ser Gln Phe Arg Ala Ala Asn Met His Ala Gln  
245 250 255  
Ile Lys Thr Ser Leu His Arg Leu Lys Pro Asp Thr Glu Pro Ala Pro  
260 265 270  
Cys Cys Val Pro Ala Ser Tyr Asn Pro Met Val Leu Ile Gln Lys Thr  
275 280 285  
Asp Thr Gly Val Ser Leu Gln Thr Tyr Asp Asp Leu Leu Ala Lys Asp  
290 295 300  
Cys His Cys Ile  
305

<210> 114  
<211> 1170  
<212> PRT  
<213> Homo sapiens

<400> 114  
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Gly Thr Asn Arg Ile Pro Glu Ser Gly Gly Asp Asn Ser Val Phe Asp  
20 25 30  
Ile Phe Glu Leu Thr Gly Ala Ala Arg Lys Gly Ser Gly Arg Arg Leu  
35 40 45  
Val Lys Gly Pro Asp Pro Ser Ser Pro Ala Phe Arg Ile Glu Asp Ala  
50 55 60  
Asn Leu Ile Pro Pro Val Pro Asp Asp Lys Phe Gln Asp Leu Val Asp  
65 70 75 80  
Ala Val Arg Ala Glu Lys Gly Phe Leu Leu Ala Ser Leu Arg Gln  
85 90 95  
Met Lys Lys Thr Arg Gly Thr Leu Leu Ala Leu Glu Arg Lys Asp His  
100 105 110  
Ser Gly Gln Val Phe Ser Val Val Ser Asn Gly Lys Ala Gly Thr Leu  
115 120 125  
Asp Leu Ser Leu Thr Val Gln Gly Lys Gln His Val Val Ser Val Glu  
130 135 140  
Glu Ala Leu Leu Ala Thr Gly Gln Trp Lys Ser Ile Thr Leu Phe Val  
145 150 155 160  
Gln Glu Asp Arg Ala Gln Leu Tyr Ile Asp Cys Glu Lys Met Glu Asn  
165 170 175  
Ala Glu Leu Asp Val Pro Ile Gln Ser Val Phe Thr Arg Asp Leu Ala  
180 185 190  
Ser Ile Ala Arg Leu Arg Ile Ala Lys Gly Gly Val Asn Asp Asn Phe  
195 200 205

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Gly | Val | Leu | Gln | Asn | Val | Arg | Phe | Val | Phe | Gly | Thr | Thr | Pro | Glu |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Asp | Ile | Leu | Arg | Asn | Lys | Gly | Cys | Ser | Ser | Ser | Thr | Ser | Val | Leu | Leu |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Thr | Leu | Asp | Asn | Asn | Val | Val | Asn | Gly | Ser | Ser | Pro | Ala | Ile | Arg | Thr |
|     |     |     | 245 |     |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Asn | Tyr | Ile | Gly | His | Lys | Thr | Lys | Asp | Leu | Gln | Ala | Ile | Cys | Gly | Ile |
|     |     | 260 |     |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Ser | Cys | Asp | Glu | Leu | Ser | Ser | Met | Val | Leu | Glu | Leu | Arg | Gly | Leu | Arg |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Thr | Ile | Val | Thr | Thr | Leu | Gln | Asp | Ser | Ile | Arg | Lys | Val | Thr | Glu | Glu |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Asn | Lys | Glu | Leu | Ala | Asn | Glu | Leu | Arg | Arg | Pro | Pro | Leu | Cys | Tyr | His |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |
| Asn | Gly | Val | Gln | Tyr | Arg | Asn | Asn | Glu | Glu | Trp | Thr | Val | Asp | Ser | Cys |
|     |     |     | 325 |     |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Thr | Glu | Cys | His | Cys | Gln | Asn | Ser | Val | Thr | Ile | Cys | Lys | Lys | Val | Ser |
|     |     | 340 |     |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Cys | Pro | Ile | Met | Pro | Cys | Ser | Asn | Ala | Thr | Val | Pro | Asp | Gly | Glu | Cys |
|     | 355 |     |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Cys | Pro | Arg | Cys | Trp | Pro | Ser | Asp | Ser | Ala | Asp | Asp | Gly | Trp | Ser | Pro |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Trp | Ser | Glu | Trp | Thr | Ser | Cys | Ser | Thr | Ser | Cys | Gly | Asn | Gly | Ile | Gln |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Gln | Arg | Gly | Arg | Ser | Cys | Asp | Ser | Leu | Asn | Asn | Arg | Cys | Glu | Gly | Ser |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Ser | Val | Gln | Thr | Arg | Thr | Cys | His | Ile | Gln | Glu | Cys | Asp | Lys | Arg | Phe |
|     |     | 420 |     |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Lys | Gln | Asp | Gly | Gly | Trp | Ser | His | Trp | Ser | Pro | Trp | Ser | Ser | Cys | Ser |
|     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |     |
| Val | Thr | Cys | Gly | Asp | Gly | Val | Ile | Thr | Arg | Ile | Arg | Leu | Cys | Asn | Ser |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |
| Pro | Ser | Pro | Gln | Met | Asn | Gly | Lys | Pro | Cys | Glu | Gly | Glu | Ala | Arg | Glu |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |
| Thr | Lys | Ala | Cys | Lys | Lys | Asp | Ala | Cys | Pro | Ile | Asn | Gly | Gly | Trp | Gly |
|     |     |     | 485 |     |     |     |     |     | 490 |     |     |     |     | 495 |     |
| Pro | Trp | Ser | Pro | Trp | Asp | Ile | Cys | Ser | Val | Thr | Cys | Gly | Gly | Gly | Val |
|     |     | 500 |     |     |     |     |     | 505 |     |     |     |     | 510 |     |     |
| Gln | Lys | Arg | Ser | Arg | Leu | Cys | Asn | Asn | Pro | Ala | Pro | Gln | Phe | Gly | Gly |
|     | 515 |     |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |
| Lys | Asp | Cys | Val | Gly | Asp | Val | Thr | Glu | Asn | Gln | Ile | Cys | Asn | Lys | Gln |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |
| Asp | Cys | Pro | Ile | Asp | Gly | Cys | Leu | Ser | Asn | Pro | Cys | Phe | Ala | Gly | Val |
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |
| Lys | Cys | Thr | Ser | Tyr | Pro | Asp | Gly | Ser | Trp | Lys | Cys | Gly | Ala | Cys | Pro |
|     |     |     | 565 |     |     |     |     |     | 570 |     |     |     |     | 575 |     |
| Pro | Gly | Tyr | Ser | Gly | Asn | Gly | Ile | Gln | Cys | Thr | Asp | Val | Asp | Glu | Cys |
|     |     | 580 |     |     |     |     |     | 585 |     |     |     |     | 590 |     |     |
| Lys | Glu | Val | Pro | Asp | Ala | Cys | Phe | Asn | His | Asn | Gly | Glu | His | Arg | Cys |
|     | 595 |     |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |
| Glu | Asn | Thr | Asp | Pro | Gly | Tyr | Asn | Cys | Leu | Pro | Cys | Pro | Pro | Arg | Phe |
|     | 610 |     |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |
| Thr | Gly | Ser | Gln | Pro | Phe | Gly | Gln | Gly | Val | Glu | His | Ala | Thr | Ala | Asn |
| 625 |     |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     | 640 |
| Lys | Gln | Val | Cys | Lys | Pro | Arg | Asn | Pro | Cys | Thr | Asp | Gly | Thr | His | Asp |
|     |     |     | 645 |     |     |     |     |     | 650 |     |     |     |     | 655 |     |
| Cys | Asn | Lys | Asn | Ala | Lys | Cys | Asn | Tyr | Leu | Gly | His | Tyr | Ser | Asp | Pro |
|     |     | 660 |     |     |     |     |     | 665 |     |     |     |     | 670 |     |     |
| Met | Tyr | Arg | Cys | Glu | Cys | Lys | Pro | Gly | Tyr | Ala | Gly | Asn | Gly | Ile | Ile |
|     | 675 |     |     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |

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|      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--|
| Cys  | Gly  | Glu  | Asp  | Thr  | Asp  | Leu  | Asp  | Gly  | Trp  | Pro  | Asn  | Glu  | Asn  | Leu  | Val  |  |
| 690  |      |      |      |      |      | 695  |      |      |      |      | 700  |      |      |      |      |  |
| Cys  | Val  | Ala  | Asn  | Ala  | Thr  | Tyr  | His  | Cys  | Lys  | Lys  | Asp  | Asn  | Cys  | Pro  | Asn  |  |
| 705  |      |      |      |      | 710  |      |      |      |      | 715  |      |      |      |      | 720  |  |
| Leu  | Pro  | Asn  | Ser  | Gly  | Gln  | Glu  | Asp  | Tyr  | Asp  | Lys  | Asp  | Gly  | Ile  | Gly  | Asp  |  |
|      |      |      |      | 725  |      |      |      |      | 730  |      |      |      |      | 735  |      |  |
| Ala  | Cys  | Asp  | Asp  | Asp  | Asp  | Asn  | Asp  | Lys  | Ile  | Pro  | Asp  | Asp  | Arg  | Asp  |      |  |
|      |      |      | 740  |      |      |      | 745  |      |      |      |      | 750  |      |      |      |  |
| Asn  | Cys  | Pro  | Phe  | His  | Tyr  | Asn  | Pro  | Ala  | Gln  | Tyr  | Asp  | Tyr  | Asp  | Arg  | Asp  |  |
|      |      | 755  |      |      |      | 760  |      |      |      |      | 765  |      |      |      |      |  |
| Asp  | Val  | Gly  | Asp  | Arg  | Cys  | Asp  | Asn  | Cys  | Pro  | Tyr  | Asn  | His  | Asn  | Pro  | Asp  |  |
|      | 770  |      |      |      |      | 775  |      |      |      |      | 780  |      |      |      |      |  |
| Gln  | Ala  | Asp  | Thr  | Asp  | Asn  | Asn  | Gly  | Glu  | Gly  | Asp  | Ala  | Cys  | Ala  | Ala  | Asp  |  |
| 785  |      |      |      |      | 790  |      |      |      |      | 795  |      |      |      |      | 800  |  |
| Ile  | Asp  | Gly  | Asp  | Gly  | Ile  | Leu  | Asn  | Glu  | Arg  | Asp  | Asn  | Cys  | Gln  | Tyr  | Val  |  |
|      |      |      |      | 805  |      |      |      |      | 810  |      |      |      |      | 815  |      |  |
| Tyr  | Asn  | Val  | Asp  | Gln  | Arg  | Asp  | Thr  | Asp  | Met  | Asp  | Gly  | Val  | Gly  | Asp  | Gln  |  |
|      |      |      | 820  |      |      |      | 825  |      |      |      |      |      | 830  |      |      |  |
| Cys  | Asp  | Asn  | Cys  | Pro  | Leu  | Glu  | His  | Asn  | Pro  | Asp  | Gln  | Leu  | Asp  | Ser  | Asp  |  |
|      |      | 835  |      |      |      |      | 840  |      |      |      |      | 845  |      |      |      |  |
| Ser  | Asp  | Arg  | Ile  | Gly  | Asp  | Thr  | Cys  | Asp  | Asn  | Asn  | Gln  | Asp  | Ile  | Asp  | Glu  |  |
|      |      | 850  |      |      |      | 855  |      |      |      |      | 860  |      |      |      |      |  |
| Asp  | Gly  | His  | Gln  | Asn  | Asn  | Leu  | Asp  | Asn  | Cys  | Pro  | Tyr  | Val  | Pro  | Asn  | Ala  |  |
| 865  |      |      |      | 870  |      |      |      |      |      | 875  |      |      |      |      | 880  |  |
| Asn  | Gln  | Ala  | Asp  | His  | Asp  | Lys  | Asp  | Gly  | Lys  | Gly  | Asp  | Ala  | Cys  | Asp  | His  |  |
|      |      |      |      | 885  |      |      |      |      | 890  |      |      |      |      | 895  |      |  |
| Asp  | Asp  | Asp  | Asn  | Asp  | Gly  | Ile  | Pro  | Asp  | Asp  | Lys  | Asp  | Asn  | Cys  | Arg  | Leu  |  |
|      |      |      | 900  |      |      |      |      | 905  |      |      |      |      | 910  |      |      |  |
| Val  | Pro  | Asn  | Pro  | Asp  | Gln  | Lys  | Asp  | Ser  | Asp  | Gly  | Asp  | Gly  | Arg  | Gly  | Asp  |  |
|      |      | 915  |      |      |      |      | 920  |      |      |      |      | 925  |      |      |      |  |
| Ala  | Cys  | Lys  | Asp  | Asp  | Phe  | Asp  | His  | Asp  | Ser  | Val  | Pro  | Asp  | Ile  | Asp  | Asp  |  |
|      | 930  |      |      |      | 935  |      |      |      |      |      | 940  |      |      |      |      |  |
| Ile  | Cys  | Pro  | Glu  | Asn  | Val  | Asp  | Ile  | Ser  | Glu  | Thr  | Asp  | Phe  | Arg  | Arg  | Phe  |  |
| 945  |      |      |      | 950  |      |      |      |      |      | 955  |      |      |      |      | 960  |  |
| Gln  | Met  | Ile  | Pro  | Leu  | Asp  | Pro  | Lys  | Gly  | Thr  | Ser  | Gln  | Asn  | Asp  | Pro  | Asn  |  |
|      |      |      |      | 965  |      |      |      |      | 970  |      |      |      |      | 975  |      |  |
| Trp  | Val  | Val  | Arg  | His  | Gln  | Gly  | Lys  | Glu  | Leu  | Val  | Gln  | Thr  | Val  | Asn  | Cys  |  |
|      |      |      | 980  |      |      |      |      | 985  |      |      |      |      | 990  |      |      |  |
| Asp  | Pro  | Gly  | Leu  | Ala  | Val  | Gly  | Tyr  | Asp  | Glu  | Phe  | Asn  | Ala  | Val  | Asp  | Phe  |  |
|      |      | 995  |      |      |      |      | 1000 |      |      |      |      | 1005 |      |      |      |  |
| Ser  | Gly  | Thr  | Phe  | Phe  | Ile  | Asn  | Thr  | Glu  | Arg  | Asp  | Asp  | Asp  | Tyr  | Ala  | Gly  |  |
|      | 1010 |      |      |      |      | 1015 |      |      |      |      | 1020 |      |      |      |      |  |
| Phe  | Val  | Phe  | Gly  | Tyr  | Gln  | Ser  | Ser  | Ser  | Arg  | Phe  | Tyr  | Val  | Val  | Met  | Trp  |  |
| 1025 |      |      |      |      | 1030 |      |      |      |      | 1035 |      |      |      |      | 1040 |  |
| Lys  | Gln  | Val  | Thr  | Gln  | Ser  | Tyr  | Trp  | Asp  | Thr  | Asn  | Pro  | Thr  | Arg  | Ala  | Gln  |  |
|      |      |      |      | 1045 |      |      |      |      | 1050 |      |      |      |      | 1055 |      |  |
| Gly  | Tyr  | Ser  | Gly  | Leu  | Ser  | Val  | Lys  | Val  | Val  | Asn  | Ser  | Thr  | Thr  | Gly  | Pro  |  |
|      |      |      | 1060 |      |      |      |      | 1065 |      |      |      |      | 1070 |      |      |  |
| Gly  | Glu  | His  | Leu  | Arg  | Asn  | Ala  | Leu  | Trp  | His  | Thr  | Gly  | Asn  | Thr  | Pro  | Gly  |  |
|      |      | 1075 |      |      |      |      | 1080 |      |      |      |      | 1085 |      |      |      |  |
| Gln  | Val  | Arg  | Thr  | Leu  | Trp  | His  | Asp  | Pro  | Arg  | His  | Ile  | Gly  | Trp  | Lys  | Asp  |  |
|      |      |      |      |      |      | 1095 |      |      |      |      | 1100 |      |      |      |      |  |
| Phe  | Thr  | Ala  | Tyr  | Arg  | Trp  | Arg  | Leu  | Ser  | His  | Arg  | Pro  | Lys  | Thr  | Gly  | Phe  |  |
| 1105 |      |      |      |      | 1110 |      |      |      |      | 1115 |      |      |      |      | 1120 |  |
| Ile  | Arg  | Val  | Val  | Met  | Tyr  | Glu  | Gly  | Lys  | Lys  | Ile  | Met  | Ala  | Asp  | Ser  | Gly  |  |
|      |      |      |      | 1125 |      |      |      |      | 1130 |      |      |      |      | 1135 |      |  |
| Pro  | Ile  | Tyr  | Asp  | Lys  | Thr  | Tyr  | Ala  | Gly  | Gly  | Arg  | Leu  | Gly  | Leu  | Phe  | Val  |  |
|      |      |      | 1140 |      |      |      |      | 1145 |      |      |      |      | 1150 |      |      |  |

Phe Ser Gln Glu Met Val Phe Phe Ser Asp Leu Lys Tyr Glu Cys Arg  
 1155 1160 1165  
 Asp Pro  
 1170

<210> 115  
 <211> 373  
 <212> PRT  
 <213> Homo sapiens

<400> 115  
 Met Ser Ser Thr Pro His Asp Pro Phe Tyr Ser Ser Pro Phe Gly Pro  
 1 5 10 15  
 Phe Tyr Arg Arg His Thr Pro Tyr Met Val Gln Pro Glu Tyr Arg Ile  
 20 25 30  
 Tyr Glu Met Asn Lys Arg Leu Gln Ser Arg Thr Glu Asp Ser Asp Asn  
 35 40 45  
 Leu Trp Trp Asp Ala Phe Ala Thr Glu Phe Phe Glu Asp Asp Ala Thr  
 50 55 60  
 Leu Thr Leu Ser Phe Cys Leu Glu Asp Gly Pro Lys Arg Tyr Thr Ile  
 65 70 75 80  
 Gly Arg Thr Leu Ile Pro Arg Tyr Phe Ser Thr Val Phe Glu Gly Gly  
 85 90 95  
 Val Thr Asp Leu Tyr Tyr Ile Leu Lys His Ser Lys Glu Ser Tyr His  
 100 105 110  
 Asn Ser Ser Ile Thr Val Asp Cys Asp Gln Cys Thr Met Val Thr Gln  
 115 120 125  
 His Gly Lys Pro Met Phe Thr Lys Val Cys Thr Glu Gly Arg Leu Ile  
 130 135 140  
 Leu Glu Phe Thr Phe Asp Leu Met Arg Ile Lys Thr Trp His Phe  
 145 150 155 160  
 Thr Ile Arg Gln Tyr Arg Glu Leu Val Pro Arg Ser Ile Leu Ala Met  
 165 170 175  
 His Ala Gln Asp Pro Gln Val Leu Asp Gln Leu Ser Lys Asn Ile Thr  
 180 185 190  
 Arg Met Gly Leu Thr Asn Phe Thr Leu Asn Tyr Leu Arg Leu Cys Val  
 195 200 205  
 Ile Leu Glu Pro Met Gln Glu Leu Met Ser Arg His Lys Thr Tyr Asn  
 210 215 220  
 Leu Ser Pro Arg Asp Cys Leu Lys Thr Cys Leu Phe Gln Lys Trp Gln  
 225 230 235 240  
 Arg Met Val Ala Pro Ala Glu Pro Thr Arg Gln Pro Thr Thr Lys  
 245 250 255  
 Arg Arg Lys Arg Lys Asn Ser Thr Ser Ser Thr Ser Asn Ser Ser Ala  
 260 265 270  
 Gly Asn Asn Ala Asn Ser Thr Gly Ser Lys Lys Lys Thr Thr Ala Ala  
 275 280 285  
 Asn Leu Ser Leu Ser Ser Gln Val Pro Asp Val Met Val Val Gly Glu  
 290 295 300  
 Pro Thr Leu Met Gly Gly Glu Phe Gly Asp Glu Asp Glu Arg Leu Ile  
 305 310 315 320  
 Thr Arg Leu Glu Asn Thr Gln Tyr Asp Ala Ala Asn Gly Met Asp Asp  
 325 330 335  
 Glu Glu Asp Phe Asn Asn Ser Pro Ala Leu Gly Asn Asn Ser Pro Trp  
 340 345 350  
 Asn Ser Lys Pro Pro Ala Thr Gln Glu Thr Lys Ser Glu Asn Pro Pro  
 355 360 365  
 Pro Gln Ala Ser Gln  
 370

<210> 116  
 <211> 73  
 <212> PRT  
 <213> Homo sapiens

<400> 116  
 Met Pro Ala Leu His Ile Glu Asp Leu Pro Glu Lys Glu Lys Leu Lys  
 1 5 10 15  
 Met Glu Val Glu Gln Leu Arg Lys Glu Val Lys Leu Gln Arg Gln Gln  
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 Val Ser Lys Cys Ser Glu Glu Ile Lys Asn Tyr Ile Glu Glu Arg Ser  
 35 40 45  
 Gly Glu Asp Pro Leu Val Lys Gly Ile Pro Glu Asp Lys Asn Pro Phe  
 50 55 60  
 Lys Glu Lys Gly Ser Cys Val Ile Ser  
 65 70

<210> 117  
 <211> 667  
 <212> PRT  
 <213> Homo sapiens

<400> 117  
 Met His His Gln Gln Arg Met Ala Ala Leu Gly Thr Asp Lys Glu Leu  
 1 5 10 15  
 Ser Asp Leu Leu Asp Phe Ser Ala Met Phe Ser Pro Pro Val Ser Ser  
 20 25 30  
 Gly Lys Asn Gly Pro Thr Ser Leu Ala Ser Gly His Phe Thr Gly Ser  
 35 40 45  
 Asn Val Glu Asp Arg Ser Ser Ser Gly Ser Trp Gly Asn Gly Gly His  
 50 55 60  
 Pro Ser Pro Ser Arg Asn Tyr Gly Asp Gly Thr Pro Tyr Asp His Met  
 65 70 75 80  
 Thr Ser Arg Asp Leu Gly Ser His Asp Asn Leu Ser Pro Pro Phe Val  
 85 90 95  
 Asn Ser Arg Ile Gln Ser Lys Thr Glu Arg Gly Ser Tyr Ser Ser Tyr  
 100 105 110  
 Gly Arg Glu Ser Asn Leu Gln Gly Cys His Gln Gln Ser Leu Leu Gly  
 115 120 125  
 Gly Asp Met Asp Met Gly Asn Pro Gly Thr Leu Ser Pro Thr Lys Pro  
 130 135 140  
 Gly Ser Gln Tyr Tyr Gln Tyr Ser Ser Asn Asn Pro Arg Arg Arg Pro  
 145 150 155 160  
 Leu His Ser Ser Ala Met Glu Val Gln Thr Lys Lys Val Arg Lys Val  
 165 170 175  
 Pro Pro Gly Leu Pro Ser Ser Val Tyr Ala Pro Ser Ala Ser Thr Ala  
 180 185 190  
 Asp Tyr Asn Arg Asp Ser Pro Gly Tyr Pro Ser Ser Lys Pro Ala Thr  
 195 200 205  
 Ser Thr Phe Pro Ser Ser Phe Phe Met Gln Asp Gly His His Ser Ser  
 210 215 220  
 Asp Pro Trp Ser Ser Ser Ser Gly Met Asn Gln Pro Gly Tyr Ala Gly  
 225 230 235 240  
 Met Leu Gly Asn Ser Ser His Ile Pro Gln Ser Ser Ser Tyr Cys Ser  
 245 250 255  
 Leu His Pro His Glu Arg Leu Ser Tyr Pro Ser His Ser Ser Ala Asp  
 260 265 270  
 Ile Asn Ser Ser Leu Pro Pro Met Ser Thr Phe His Arg Ser Gly Thr  
 275 280 285  
 Asn His Tyr Ser Thr Ser Ser Cys Thr Pro Pro Ala Asn Gly Thr Asp  
 290 295 300



Ser Ile Met Ala Asn Arg Gly Ser Gly Ala Ala Gly Ser Ser Gln Thr  
 305 310 315 320  
 Gly Asp Ala Leu Gly Lys Ala Leu Ala Ser Ile Tyr Ser Pro Asp His  
 325 330 335  
 Thr Asn Asn Ser Phe Ser Ser Asn Pro Ser Thr Pro Val Gly Ser Pro  
 340 345 350  
 Pro Ser Leu Ser Ala Gly Thr Ala Val Trp Ser Arg Asn Gly Gly Gln  
 355 360 365  
 Ala Ser Ser Ser Pro Asn Tyr Glu Gly Pro Leu His Ser Leu Gln Ser  
 370 375 380  
 Arg Ile Glu Asp Arg Leu Glu Arg Leu Asp Asp Ala Ile His Val Leu  
 385 390 395 400  
 Arg Asn His Ala Val Gly Pro Ser Thr Ala Met Pro Gly Gly His Gly  
 405 410 415  
 Asp Met His Gly Ile Ile Gly Pro Ser His Asn Gly Ala Met Gly Gly  
 420 425 430  
 Leu Gly Ser Gly Tyr Gly Thr Gly Leu Leu Ser Ala Asn Arg His Ser  
 435 440 445  
 Leu Met Val Gly Thr His Arg Glu Asp Gly Val Ala Leu Arg Gly Ser  
 450 455 460  
 His Ser Leu Leu Pro Asn Gln Val Pro Val Pro Gln Leu Pro Val Gln  
 465 470 475 480  
 Ser Ala Thr Ser Pro Asp Leu Asn Pro Pro Gln Asp Pro Tyr Arg Gly  
 485 490 495  
 Met Pro Pro Gly Leu Gln Gly Gln Ser Val Ser Ser Gly Ser Ser Glu  
 500 505 510  
 Ile Lys Ser Asp Asp Glu Gly Asp Glu Asn Leu Gln Asp Thr Lys Ser  
 515 520 525  
 Ser Glu Asp Lys Lys Leu Asp Asp Asp Lys Lys Asp Ile Lys Ser Ile  
 530 535 540  
 Thr Ser Asn Asn Asp Asp Glu Asp Leu Thr Pro Glu Gln Lys Ala Glu  
 545 550 555 560  
 Arg Glu Lys Glu Arg Arg Met Ala Asn Asn Ala Arg Glu Arg Leu Arg  
 565 570 575  
 Val Arg Asp Ile Asn Glu Ala Phe Lys Glu Leu Gly Arg Met Val Gln  
 580 585 590  
 Leu His Leu Lys Ser Asp Lys Pro Gln Thr Lys Leu Leu Ile Leu His  
 595 600 605  
 Gln Ala Val Ala Val Ile Leu Ser Leu Glu Gln Gln Val Arg Glu Arg  
 610 615 620  
 Asn Leu Asn Pro Lys Ala Ala Cys Leu Lys Arg Arg Glu Glu Glu Lys  
 625 630 635 640  
 Val Ser Ser Glu Pro Pro Pro Leu Ser Leu Ala Gly Pro His Pro Gly  
 645 650 655  
 Met Gly Asp Ala Ser Asn His Met Gly Gln Met  
 660 665

<210> 118  
 <211> 749  
 <212> PRT  
 <213> Homo sapiens

<400> 118  
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 Ser His Lys Phe Thr Val Val Val Leu Arg Ala Thr Lys Val Thr Lys  
 20 25 30  
 Gly Ala Phe Gly Asp Met Leu Asp Thr Pro Asp Pro Tyr Val Glu Leu  
 35 40 45  
 Phe Ile Ser Thr Thr Pro Asp Ser Arg Lys Arg Thr Arg His Phe Asn  
 50 55 60

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Asp | Ile | Asn | Pro | Val | Trp | Asn | Glu | Thr | Phe | Glu | Phe | Ile | Leu | Asp |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |
| Pro | Asn | Gln | Glu | Asn | Val | Leu | Glu | Ile | Thr | Leu | Met | Asp | Ala | Asn | Tyr |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Val | Met | Asp | Glu | Thr | Leu | Gly | Thr | Ala | Thr | Phe | Thr | Val | Ser | Ser | Met |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Lys | Val | Gly | Glu | Lys | Lys | Glu | Val | Pro | Phe | Ile | Phe | Asn | Gln | Val | Thr |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Glu | Met | Val | Leu | Glu | Met | Ser | Leu | Glu | Val | Cys | Ser | Cys | Pro | Asp | Leu |
|     |     | 130 |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Arg | Phe | Ser | Met | Ala | Leu | Cys | Asp | Gln | Glu | Lys | Thr | Phe | Arg | Gln | Gln |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
| Arg | Lys | Glu | His | Ile | Arg | Glu | Ser | Met | Lys | Lys | Leu | Leu | Gly | Pro | Lys |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Asn | Ser | Glu | Gly | Leu | His | Ser | Ala | Arg | Asp | Val | Pro | Val | Val | Ala | Ile |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Leu | Gly | Ser | Gly | Gly | Gly | Phe | Arg | Ala | Met | Val | Gly | Phe | Ser | Gly | Val |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Met | Lys | Ala | Leu | Tyr | Glu | Ser | Gly | Ile | Leu | Asp | Cys | Ala | Thr | Tyr | Val |
|     |     | 210 |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Ala | Gly | Leu | Ser | Gly | Ser | Thr | Trp | Tyr | Met | Ser | Thr | Leu | Tyr | Ser | His |
| 225 |     |     |     |     |     | 230 |     |     |     | 235 |     |     |     |     | 240 |
| Pro | Asp | Phe | Pro | Glu | Lys | Gly | Pro | Glu | Glu | Ile | Asn | Glu | Glu | Leu | Met |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Lys | Asn | Val | Ser | His | Asn | Pro | Leu | Leu | Leu | Leu | Thr | Pro | Gln | Lys | Val |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Lys | Arg | Tyr | Val | Glu | Ser | Leu | Trp | Lys | Lys | Lys | Ser | Ser | Gly | Gln | Pro |
|     |     |     | 275 |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Val | Thr | Phe | Thr | Asp | Ile | Phe | Gly | Met | Leu | Ile | Gly | Glu | Thr | Leu | Ile |
|     |     |     | 290 |     |     |     | 295 |     |     |     | 300 |     |     |     |     |
| His | Asn | Arg | Met | Asn | Thr | Thr | Leu | Ser | Ser | Leu | Lys | Glu | Lys | Val | Asn |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |
| Thr | Ala | Gln | Cys | Pro | Leu | Pro | Leu | Phe | Thr | Cys | Leu | His | Val | Lys | Pro |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Asp | Val | Ser | Glu | Leu | Met | Phe | Ala | Asp | Trp | Val | Glu | Phe | Ser | Pro | Tyr |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Glu | Ile | Gly | Met | Ala | Lys | Tyr | Gly | Thr | Phe | Met | Ala | Pro | Asp | Leu | Phe |
|     |     | 355 |     |     |     |     | 360 |     |     |     | 365 |     |     |     |     |
| Gly | Ser | Lys | Phe | Phe | Met | Gly | Thr | Val | Val | Lys | Lys | Tyr | Glu | Glu | Asn |
|     |     | 370 |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Pro | Leu | His | Phe | Leu | Met | Gly | Val | Trp | Gly | Ser | Ala | Phe | Ser | Ile | Leu |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Phe | Asn | Arg | Val | Leu | Gly | Val | Ser | Gly | Ser | Gln | Ser | Arg | Gly | Ser | Thr |
|     |     |     |     | 405 |     |     |     | 410 |     |     |     |     | 415 |     |     |
| Met | Glu | Glu | Glu | Leu | Glu | Asn | Ile | Thr | Thr | Lys | His | Ile | Val | Ser | Asn |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Asp | Ser | Ser | Asp | Ser | Asp | Asp | Glu | Ser | His | Glu | Pro | Lys | Gly | Thr | Glu |
|     |     | 435 |     |     |     | 440 |     |     |     |     |     | 445 |     |     |     |
| Asn | Glu | Asp | Ala | Gly | Ser | Asp | Tyr | Gln | Ser | Asp | Asn | Gln | Ala | Ser | Trp |
|     |     | 450 |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |
| Ile | His | Arg | Met | Ile | Met | Ala | Leu | Val | Ser | Asp | Ser | Ala | Leu | Phe | Asn |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |
| Thr | Arg | Glu | Gly | Arg | Ala | Gly | Lys | Val | His | Asn | Phe | Met | Leu | Gly | Leu |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     | 495 |     |     |
| Asn | Leu | Asn | Thr | Ser | Tyr | Pro | Leu | Ser | Pro | Leu | Ser | Asp | Phe | Ala | Thr |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |
| Gln | Asp | Ser | Phe | Asp | Asp | Asp | Glu | Leu | Asp | Ala | Ala | Val | Ala | Asp | Pro |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |
| Asp | Glu | Phe | Glu | Arg | Ile | Tyr | Glu | Pro | Leu | Asp | Val | Lys | Ser | Lys | Lys |
|     |     | 530 |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |

Ile His Val Val Asp Ser Gly Leu Thr Phe Asn Leu Pro Tyr Pro Leu  
 545 550 555 560  
 Ile Leu Arg Pro Gln Arg Gly Val Asp Leu Ile Ile Ser Phe Asp Phe  
 565 570 575  
 Ser Ala Arg Pro Ser Asp Ser Ser Pro Phe Lys Glu Leu Leu Leu  
 580 585 590  
 Ala Glu Lys Trp Ala Lys Met Asn Lys Leu Pro Phe Pro Lys Ile Asp  
 595 600 605  
 Pro Tyr Val Phe Asp Arg Glu Gly Leu Lys Glu Cys Tyr Val Phe Lys  
 610 615 620  
 Pro Lys Asn Pro Asp Met Glu Lys Asp Cys Pro Thr Ile Ile His Phe  
 625 630 635 640  
 Val Leu Ala Asn Ile Asn Phe Arg Lys Tyr Lys Ala Pro Gly Val Pro  
 645 650 655  
 Arg Glu Thr Glu Glu Glu Lys Glu Ile Ala Asp Phe Asp Ile Phe Asp  
 660 665 670  
 Asp Pro Glu Ser Pro Phe Ser Thr Phe Asn Phe Gln Tyr Pro Asn Gln  
 675 680 685  
 Ala Phe Lys Arg Leu His Asp Leu Met His Phe Asn Thr Leu Asn Asn  
 690 695 700  
 Ile Asp Val Ile Lys Glu Ala Met Val Glu Ser Ile Glu Tyr Arg Arg  
 705 710 715 720  
 Gln Asn Pro Ser Arg Cys Ser Val Ser Leu Ser Asn Val Glu Ala Arg  
 725 730 735  
 Arg Phe Phe Asn Lys Glu Phe Leu Ser Lys Pro Lys Ala  
 740 745

<210> 119  
 <211> 235  
 <212> PRT  
 <213> Homo sapiens

<400> 119  
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 Thr Glu Ala Ala Leu Gly Asp Ala Ala Gln Glu Pro Thr Gly Asn Asn  
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 Ala Glu Ile Cys Leu Leu Pro Leu Asp Tyr Gly Pro Cys Arg Ala Leu  
 35 40 45  
 Leu Leu Arg Tyr Tyr Tyr Asp Arg Tyr Thr Gln Ser Cys Arg Gln Phe  
 50 55 60  
 Leu Tyr Gly Gly Cys Glu Gly Asn Ala Asn Asn Phe Tyr Thr Trp Glu  
 65 70 75 80  
 Ala Cys Asp Asp Ala Cys Trp Arg Ile Glu Lys Val Pro Lys Val Cys  
 85 90 95  
 Arg Leu Gln Val Ser Val Asp Asp Gln Cys Glu Gly Ser Thr Glu Lys  
 100 105 110  
 Tyr Phe Phe Asn Leu Ser Ser Met Thr Cys Glu Lys Phe Phe Ser Gly  
 115 120 125  
 Gly Cys His Arg Asn Arg Ile Glu Asn Arg Phe Pro Asp Glu Ala Thr  
 130 135 140  
 Cys Met Gly Phe Cys Ala Pro Lys Lys Ile Pro Ser Phe Cys Tyr Ser  
 145 150 155 160  
 Pro Lys Asp Glu Gly Leu Cys Ser Ala Asn Val Thr Arg Tyr Tyr Phe  
 165 170 175  
 Asn Pro Arg Tyr Arg Thr Cys Asp Ala Phe Thr Tyr Thr Gly Cys Gly  
 180 185 190  
 Gly Asn Asp Asn Asn Phe Val Ser Arg Glu Asp Cys Lys Arg Ala Cys  
 195 200 205  
 Ala Lys Ala Leu Lys Lys Lys Lys Lys Met Pro Lys Leu Arg Phe Ala  
 210 215 220

Ser Arg Ile Arg Lys Ile Arg Lys Lys Gln Phe  
225 230 235

<210> 120  
<211> 2058  
<212> PRT  
<213> Homo sapiens

<400> 120  
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Gly Gln His Phe Pro Ser Thr Val Asn Ser Cys Ala Glu Gly Ile Val  
20 25 30  
Val Phe Arg Thr Asp Tyr Gly Gln Val Phe Thr Tyr Lys Gln Ser Thr  
35 40 45  
Ile Thr His Gln Lys Val Thr Ala Met His Pro Thr Asn Glu Glu Gly  
50 55 60  
Val Asp Asp Met Ala Ser Leu Thr Glu Leu His Gly Gly Ser Ile Met  
65 70 75 80  
Tyr Asn Leu Phe Gln Arg Tyr Lys Arg Asn Gln Ile Tyr Thr Tyr Ile  
85 90 95  
Gly Ser Ile Leu Ala Ser Val Asn Pro Tyr Gln Pro Ile Ala Gly Leu  
100 105 110  
Tyr Glu Pro Ala Thr Met Glu Gln Tyr Ser Arg Arg His Leu Gly Glu  
115 120 125  
Leu Pro Pro His Ile Phe Ala Ile Ala Asn Glu Cys Tyr Arg Cys Leu  
130 135 140  
Trp Lys Arg Tyr Asp Asn Gln Cys Ile Leu Ile Ser Gly Glu Ser Gly  
145 150 155 160  
Ala Gly Lys Thr Glu Ser Thr Lys Leu Ile Leu Lys Phe Leu Ser Val  
165 170 175  
Ile Ser Gln Gln Ser Leu Glu Leu Ser Leu Lys Glu Lys Thr Ser Cys  
180 185 190  
Val Glu Arg Ala Ile Leu Glu Ser Ser Pro Ile Met Glu Ala Phe Gly  
195 200 205  
Asn Ala Lys Thr Val Tyr Asn Asn Asn Ser Ser Arg Phe Gly Lys Phe  
210 215 220  
Val Gln Leu Asn Ile Cys Gln Lys Gly Asn Ile Gln Gly Gly Arg Ile  
225 230 235 240  
Val Asp Tyr Leu Leu Glu Lys Asn Arg Val Val Arg Gln Asn Pro Gly  
245 250 255  
Glu Arg Asn Tyr His Ile Phe Tyr Ala Leu Leu Ala Gly Leu Glu His  
260 265 270  
Glu Glu Arg Glu Glu Phe Tyr Leu Ser Thr Pro Glu Asn Tyr His Tyr  
275 280 285  
Leu Asn Gln Ser Gly Cys Val Glu Asp Lys Thr Ile Ser Asp Gln Glu  
290 295 300  
Ser Phe Arg Glu Val Ile Thr Ala Met Asp Val Met Gln Phe Ser Lys  
305 310 315 320  
Glu Glu Val Arg Glu Val Ser Arg Leu Leu Ala Gly Ile Leu His Leu  
325 330 335  
Gly Asn Ile Glu Phe Ile Thr Ala Gly Gly Ala Gln Val Ser Phe Lys  
340 345 350  
Thr Ala Leu Gly Arg Ser Ala Glu Leu Leu Gly Leu Asp Pro Thr Gln  
355 360 365  
Leu Thr Asp Ala Leu Thr Gln Arg Ser Met Phe Leu Arg Gly Glu Glu  
370 375 380  
Ile Leu Thr Pro Leu Asn Val Gln Gln Ala Val Asp Ser Arg Asp Ser  
385 390 395 400  
Leu Ala Met Ala Leu Tyr Ala Cys Cys Phe Glu Trp Val Ile Lys Lys  
405 410 415

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Asn | Ser | Arg | Ile | Lys | Gly | Asn | Glu | Asp | Phe | Lys | Ser | Ile | Gly | Ile |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Leu | Asp | Ile | Phe | Gly | Phe | Glu | Asn | Phe | Glu | Val | Asn | His | Phe | Glu | Gln |
|     |     | 435 |     |     |     |     | 440 |     |     |     | 445 |     |     |     |     |
| Phe | Asn | Ile | Asn | Tyr | Ala | Asn | Glu | Lys | Leu | Gln | Glu | Tyr | Phe | Asn | Lys |
|     | 450 |     |     |     |     | 455 |     |     |     | 460 |     |     |     |     |     |
| His | Ile | Phe | Ser | Leu | Glu | Gln | Leu | Glu | Tyr | Ser | Arg | Glu | Gly | Leu | Val |
| 465 |     |     |     |     | 470 |     |     |     | 475 |     |     |     |     |     | 480 |
| Trp | Glu | Asp | Ile | Asp | Trp | Ile | Asp | Asn | Gly | Glu | Cys | Leu | Asp | Leu | Ile |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |
| Glu | Lys | Lys | Leu | Gly | Leu | Leu | Ala | Leu | Ile | Asn | Glu | Glu | Ser | His | Phe |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |
| Pro | Gln | Ala | Thr | Asp | Ser | Thr | Leu | Leu | Glu | Lys | Leu | His | Ser | Gln | His |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |
| Ala | Asn | Asn | His | Phe | Tyr | Val | Lys | Pro | Arg | Val | Ala | Val | Asn | Asn | Phe |
|     | 530 |     |     |     |     | 535 |     |     |     | 540 |     |     |     |     |     |
| Gly | Val | Lys | His | Tyr | Ala | Gly | Glu | Val | Gln | Tyr | Asp | Val | Arg | Gly | Ile |
| 545 |     |     |     |     | 550 |     |     |     | 555 |     |     |     |     |     | 560 |
| Leu | Glu | Lys | Asn | Arg | Asp | Thr | Phe | Arg | Asp | Asp | Leu | Leu | Asn | Leu | Leu |
|     |     |     |     | 565 |     |     |     | 570 |     |     |     |     |     | 575 |     |
| Arg | Glu | Ser | Arg | Phe | Asp | Phe | Ile | Tyr | Asp | Leu | Phe | Glu | His | Val | Ser |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |
| Ser | Arg | Asn | Asn | Gln | Asp | Thr | Leu | Lys | Cys | Gly | Ser | Lys | His | Arg | Arg |
|     |     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |
| Pro | Thr | Val | Ser | Ser | Gln | Phe | Lys | Asp | Ser | Leu | His | Ser | Leu | Met | Ala |
|     | 610 |     |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |
| Thr | Leu | Ser | Ser | Ser | Asn | Pro | Phe | Phe | Val | Arg | Cys | Ile | Lys | Pro | Asn |
| 625 |     |     |     |     | 630 |     |     |     | 635 |     |     |     |     |     | 640 |
| Met | Gln | Lys | Met | Pro | Asp | Gln | Phe | Asp | Gln | Ala | Val | Val | Leu | Asn | Gln |
|     |     |     |     | 645 |     |     |     | 650 |     |     |     |     |     | 655 |     |
| Leu | Arg | Tyr | Ser | Gly | Met | Leu | Glu | Thr | Val | Arg | Ile | Arg | Lys | Ala | Gly |
|     |     |     | 660 |     |     |     |     | 665 |     |     |     |     | 670 |     |     |
| Tyr | Ala | Val | Arg | Arg | Pro | Phe | Gln | Asp | Phe | Tyr | Lys | Arg | Tyr | Lys | Val |
|     | 675 |     |     |     |     | 680 |     |     |     |     |     | 685 |     |     |     |
| Leu | Met | Arg | Asn | Leu | Ala | Leu | Pro | Glu | Asp | Val | Arg | Gly | Lys | Cys | Thr |
|     | 690 |     |     |     |     | 695 |     |     |     | 700 |     |     |     |     |     |
| Ser | Leu | Leu | Gln | Leu | Tyr | Asp | Ala | Ser | Asn | Ser | Glu | Trp | Gln | Leu | Gly |
| 705 |     |     |     |     | 710 |     |     |     | 715 |     |     |     |     |     | 720 |
| Lys | Thr | Lys | Val | Phe | Leu | Arg | Glu | Ser | Leu | Glu | Gln | Lys | Leu | Glu | Lys |
|     |     |     |     | 725 |     |     |     | 730 |     |     |     |     |     | 735 |     |
| Arg | Arg | Glu | Glu | Glu | Val | Ser | His | Ala | Ala | Met | Val | Ile | Arg | Ala | His |
|     |     |     |     | 740 |     |     |     | 745 |     |     |     |     | 750 |     |     |
| Val | Leu | Gly | Phe | Leu | Ala | Arg | Lys | Gln | Tyr | Arg | Lys | Val | Leu | Tyr | Cys |
|     | 755 |     |     |     |     |     | 760 |     |     |     |     | 765 |     |     |     |
| Val | Val | Ile | Ile | Gln | Lys | Asn | Tyr | Arg | Ala | Phe | Leu | Leu | Arg | Arg | Arg |
|     | 770 |     |     |     |     | 775 |     |     |     |     | 780 |     |     |     |     |
| Phe | Leu | His | Leu | Lys | Lys | Ala | Ala | Ile | Val | Phe | Gln | Lys | Gln | Leu | Arg |
| 785 |     |     |     |     | 790 |     |     |     | 795 |     |     |     |     |     | 800 |
| Gly | Gln | Ile | Ala | Arg | Arg | Val | Tyr | Arg | Gln | Leu | Leu | Ala | Glu | Lys | Arg |
|     |     |     |     | 805 |     |     |     | 810 |     |     |     |     |     | 815 |     |
| Glu | Gln | Glu | Glu | Lys | Lys | Lys | Gln | Glu | Glu | Glu | Glu | Lys | Lys | Lys | Arg |
|     |     |     | 820 |     |     |     |     | 825 |     |     |     |     | 830 |     |     |
| Glu | Glu | Glu | Glu | Arg | Glu | Arg | Glu | Arg | Glu | Arg | Arg | Glu | Ala | Glu | Leu |
|     | 835 |     |     |     |     |     | 840 |     |     |     |     | 845 |     |     |     |
| Arg | Ala | Gln | Gln | Glu | Glu | Glu | Thr | Arg | Lys | Gln | Gln | Glu | Leu | Glu | Ala |
|     | 850 |     |     |     |     | 855 |     |     |     |     | 860 |     |     |     |     |
| Leu | Gln | Lys | Ser | Gln | Lys | Glu | Ala | Glu | Leu | Thr | Arg | Glu | Leu | Glu | Lys |
| 865 |     |     |     |     | 870 |     |     |     | 875 |     |     |     |     |     | 880 |
| Gln | Lys | Glu | Asn | Lys | Gln | Val | Glu | Glu | Ile | Leu | Arg | Leu | Glu | Lys | Glu |
|     |     |     |     | 885 |     |     |     |     | 890 |     |     |     |     | 895 |     |

|      |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |  |  |
|------|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|--|--|
| Ile  | Glu | Asp | Leu  | Gln  | Arg  | Met  | Lys  | Glu  | Gln  | Gln  | Glu  | Leu  | Ser  | Leu  | Thr  |  |  |
|      |     |     | 900  |      |      |      |      | 905  |      |      |      |      | 910  |      |      |  |  |
| Glu  | Ala | Ser | Leu  | Gln  | Lys  | Leu  | Gln  | Glu  | Arg  | Arg  | Asp  | Gln  | Glu  | Leu  | Arg  |  |  |
|      |     |     | 915  |      |      |      | 920  |      |      |      |      | 925  |      |      |      |  |  |
| Arg  | Leu | Glu | Glu  | Glu  | Ala  | Cys  | Arg  | Ala  | Ala  | Gln  | Glu  | Phe  | Leu  | Glu  | Ser  |  |  |
|      |     |     | 930  |      |      | 935  |      |      |      |      | 940  |      |      |      |      |  |  |
| Leu  | Asn | Phe | Asp  | Glu  | Ile  | Asp  | Glu  | Cys  | Val  | Arg  | Asn  | Ile  | Glu  | Arg  | Ser  |  |  |
| 945  |     |     |      |      | 950  |      |      |      |      | 955  |      |      |      |      | 960  |  |  |
| Leu  | Ser | Val | Gly  | Ser  | Glu  | Phe  | Ser  | Ser  | Glu  | Leu  | Ala  | Glu  | Ser  | Ala  | Cys  |  |  |
|      |     |     |      | 965  |      |      |      |      | 970  |      |      |      |      |      | 975  |  |  |
| Glu  | Glu | Lys | Pro  | Asn  | Phe  | Asn  | Phe  | Ser  | Gln  | Pro  | Tyr  | Pro  | Glu  | Glu  | Glu  |  |  |
|      |     |     | 980  |      |      |      |      | 985  |      |      |      |      | 990  |      |      |  |  |
| Val  | Asp | Glu | Gly  | Phe  | Glu  | Ala  | Asp  | Asp  | Asp  | Ala  | Phe  | Lys  | Asp  | Ser  | Pro  |  |  |
|      |     |     | 995  |      |      |      | 1000 |      |      |      |      | 1005 |      |      |      |  |  |
| Asn  | Pro | Ser | Glu  | His  | Gly  | His  | Ser  | Asp  | Gln  | Arg  | Thr  | Ser  | Gly  | Ile  | Arg  |  |  |
|      |     |     | 1010 |      |      |      | 1015 |      |      |      |      | 1020 |      |      |      |  |  |
| Thr  | Ser | Asp | Asp  | Ser  | Ser  | Glu  | Glu  | Asp  | Pro  | Tyr  | Met  | Asn  | Asp  | Thr  | Val  |  |  |
| 1025 |     |     |      |      | 1030 |      |      |      |      | 1035 |      |      |      |      | 1040 |  |  |
| Val  | Pro | Thr | Ser  | Pro  | Ser  | Ala  | Asp  | Ser  | Thr  | Val  | Leu  | Leu  | Ala  | Pro  | Ser  |  |  |
|      |     |     |      | 1045 |      |      |      |      | 1050 |      |      |      |      |      | 1055 |  |  |
| Val  | Gln | Asp | Ser  | Gly  | Ser  | Leu  | His  | Asn  | Ser  | Ser  | Ser  | Gly  | Glu  | Ser  | Thr  |  |  |
|      |     |     | 1060 |      |      |      |      | 1065 |      |      |      |      | 1070 |      |      |  |  |
| Tyr  | Cys | Met | Pro  | Gln  | Asn  | Ala  | Gly  | Asp  | Leu  | Pro  | Ser  | Pro  | Asp  | Gly  | Asp  |  |  |
|      |     |     | 1075 |      |      |      | 1080 |      |      |      |      | 1085 |      |      |      |  |  |
| Tyr  | Asp | Tyr | Asp  | Gln  | Asp  | Asp  | Tyr  | Glu  | Asp  | Gly  | Ala  | Ile  | Thr  | Ser  | Gly  |  |  |
|      |     |     | 1090 |      |      | 1095 |      |      |      |      | 1100 |      |      |      |      |  |  |
| Ser  | Ser | Val | Thr  | Phe  | Ser  | Asn  | Ser  | Tyr  | Gly  | Ser  | Gln  | Trp  | Ser  | Pro  | Asp  |  |  |
| 1105 |     |     |      |      | 1110 |      |      |      |      | 1115 |      |      |      |      | 1120 |  |  |
| Tyr  | Arg | Cys | Ser  | Val  | Gly  | Thr  | Tyr  | Asn  | Ser  | Ser  | Gly  | Ala  | Tyr  | Arg  | Phe  |  |  |
|      |     |     |      | 1125 |      |      |      | 1130 |      |      |      |      |      | 1135 |      |  |  |
| Ser  | Ser | Glu | Gly  | Ala  | Gln  | Ser  | Ser  | Phe  | Glu  | Asp  | Ser  | Glu  | Glu  | Asp  | Phe  |  |  |
|      |     |     | 1140 |      |      |      |      | 1145 |      |      |      |      | 1150 |      |      |  |  |
| Asp  | Ser | Arg | Phe  | Asp  | Thr  | Asp  | Asp  | Glu  | Leu  | Ser  | Tyr  | Arg  | Arg  | Asp  | Ser  |  |  |
|      |     |     | 1155 |      |      |      | 1160 |      |      |      |      | 1165 |      |      |      |  |  |
| Val  | Tyr | Ser | Cys  | Val  | Thr  | Leu  | Pro  | Tyr  | Phe  | His  | Ser  | Phe  | Leu  | Tyr  | Met  |  |  |
|      |     |     | 1170 |      |      | 1175 |      |      |      |      | 1180 |      |      |      |      |  |  |
| Lys  | Gly | Gly | Leu  | Met  | Asn  | Ser  | Trp  | Lys  | Arg  | Arg  | Trp  | Cys  | Val  | Leu  | Lys  |  |  |
| 1185 |     |     |      |      | 1190 |      |      |      |      | 1195 |      |      |      |      | 1200 |  |  |
| Asp  | Glu | Thr | Phe  | Leu  | Trp  | Phe  | Arg  | Ser  | Lys  | Gln  | Glu  | Ala  | Leu  | Lys  | Gln  |  |  |
|      |     |     |      | 1205 |      |      |      |      | 1210 |      |      |      |      | 1215 |      |  |  |
| Gly  | Trp | Leu | His  | Lys  | Lys  | Gly  | Gly  | Gly  | Ser  | Ser  | Thr  | Leu  | Ser  | Arg  | Arg  |  |  |
|      |     |     | 1220 |      |      |      |      | 1225 |      |      |      |      | 1230 |      |      |  |  |
| Asn  | Trp | Lys | Lys  | Arg  | Trp  | Phe  | Val  | Leu  | Arg  | Gln  | Ser  | Lys  | Leu  | Met  | Tyr  |  |  |
|      |     |     | 1235 |      |      |      | 1240 |      |      |      |      | 1245 |      |      |      |  |  |
| Phe  | Glu | Asn | Asp  | Ser  | Glu  | Glu  | Lys  | Leu  | Lys  | Gly  | Thr  | Val  | Glu  | Val  | Arg  |  |  |
|      |     |     | 1250 |      |      | 1255 |      |      |      |      | 1260 |      |      |      |      |  |  |
| Thr  | Ala | Lys | Glu  | Ile  | Ile  | Asp  | Asn  | Thr  | Thr  | Lys  | Glu  | Asn  | Gly  | Ile  | Asp  |  |  |
| 1265 |     |     |      |      | 1270 |      |      |      |      | 1275 |      |      |      |      | 1280 |  |  |
| Ile  | Ile | Met | Ala  | Asp  | Arg  | Thr  | Phe  | His  | Leu  | Ile  | Ala  | Glu  | Ser  | Pro  | Glu  |  |  |
|      |     |     |      | 1285 |      |      |      |      | 1290 |      |      |      |      | 1295 |      |  |  |
| Asp  | Ala | Ser | Gln  | Trp  | Phe  | Ser  | Val  | Leu  | Ser  | Gln  | Val  | His  | Ala  | Ser  | Thr  |  |  |
|      |     |     | 1300 |      |      |      |      | 1305 |      |      |      |      | 1310 |      |      |  |  |
| Asp  | Gln | Glu | Ile  | Gln  | Glu  | Met  | His  | Asp  | Glu  | Gln  | Ala  | Asn  | Pro  | Gln  | Asn  |  |  |
|      |     |     | 1315 |      |      |      | 1320 |      |      |      |      | 1325 |      |      |      |  |  |
| Ala  | Val | Gly | Thr  | Leu  | Asp  | Val  | Gly  | Leu  | Ile  | Asp  | Ser  | Val  | Cys  | Ala  | Ser  |  |  |
|      |     |     | 1330 |      |      | 1335 |      |      |      |      | 1340 |      |      |      |      |  |  |
| Asp  | Ser | Pro | Asp  | Arg  | Pro  | Asn  | Ser  | Phe  | Val  | Ile  | Ile  | Thr  | Ala  | Asn  | Arg  |  |  |
| 1345 |     |     |      |      | 1350 |      |      |      |      | 1355 |      |      |      |      | 1360 |  |  |
| Val  | Leu | His | Cys  | Asn  | Ala  | Asp  | Thr  | Pro  | Glu  | Glu  | Met  | His  | His  | Trp  | Ile  |  |  |
|      |     |     |      | 1365 |      |      |      |      | 1370 |      |      |      |      |      | 1375 |  |  |

Thr Leu Leu Gln Arg Ser Lys Gly Asp Thr Arg Val Glu Gly Gln Glu  
 1380 1385 1390  
 Phe Ile Val Arg Gly Trp Leu His Lys Glu Val Lys Asn Ser Pro Lys  
 1395 1400 1405  
 Met Ser Ser Leu Lys Leu Lys Lys Arg Trp Phe Val Leu Thr His Asn  
 1410 1415 1420  
 Ser Leu Asp Tyr Tyr Lys Ser Ser Glu Lys Asn Ala Leu Lys Leu Gly  
 1425 1430 1435 1440  
 Thr Leu Val Leu Asn Ser Leu Cys Ser Val Val Pro Pro Asp Glu Lys  
 1445 1450 1455  
 Ile Phe Lys Glu Thr Gly Tyr Trp Asn Val Thr Val Tyr Gly Arg Lys  
 1460 1465 1470  
 His Cys Tyr Arg Leu Tyr Thr Lys Leu Leu Asn Glu Ala Thr Arg Trp  
 1475 1480 1485  
 Ser Ser Ala Ile Gln Asn Val Thr Asp Thr Lys Ala Pro Ile Asp Thr  
 1490 1495 1500  
 Pro Thr Gln Gln Leu Ile Gln Asp Ile Lys Glu Asn Cys Leu Asn Ser  
 1505 1510 1515 1520  
 Asp Val Val Glu Gln Ile Tyr Lys Arg Asn Pro Ile Leu Arg Tyr Thr  
 1525 1530 1535  
 His His Pro Leu His Ser Pro Leu Leu Pro Leu Pro Tyr Gly Asp Ile  
 1540 1545 1550  
 Asn Leu Asn Leu Leu Lys Asp Lys Gly Tyr Thr Thr Leu Gln Asp Glu  
 1555 1560 1565  
 Ala Ile Lys Ile Phe Asn Ser Leu Gln Gln Leu Glu Ser Met Ser Asp  
 1570 1575 1580  
 Pro Ile Pro Ile Ile Gln Gly Ile Leu Gln Thr Gly His Asp Leu Arg  
 1585 1590 1595 1600  
 Pro Leu Arg Asp Glu Leu Tyr Cys Gln Leu Ile Lys Gln Thr Asn Lys  
 1605 1610 1615  
 Val Pro His Pro Gly Ser Val Gly Asn Leu Tyr Ser Trp Gln Ile Leu  
 1620 1625 1630  
 Thr Cys Leu Ser Cys Thr Phe Leu Pro Ser Arg Gly Ile Leu Lys Tyr  
 1635 1640 1645  
 Leu Lys Phe His Leu Lys Arg Ile Arg Glu Gln Phe Pro Gly Thr Glu  
 1650 1655 1660  
 Met Glu Lys Tyr Ala Leu Phe Thr Tyr Glu Ser Leu Lys Lys Thr Lys  
 1665 1670 1675 1680  
 Cys Arg Glu Phe Val Pro Ser Arg Asp Glu Ile Glu Ala Leu Ile His  
 1685 1690 1695  
 Arg Gln Glu Met Thr Ser Thr Val Tyr Cys His Gly Gly Gly Ser Cys  
 1700 1705 1710  
 Lys Ile Thr Ile Asn Ser His Thr Thr Ala Gly Glu Val Val Glu Lys  
 1715 1720 1725  
 Leu Ile Arg Gly Leu Ala Met Glu Asp Ser Arg Asn Met Phe Ala Leu  
 1730 1735 1740  
 Phe Glu Tyr Asn Gly His Val Asp Lys Ala Ile Glu Ser Arg Thr Val  
 1745 1750 1755 1760  
 Val Ala Asp Val Leu Ala Lys Phe Glu Lys Leu Ala Ala Thr Ser Glu  
 1765 1770 1775  
 Val Gly Asp Leu Pro Trp Lys Phe Tyr Phe Lys Leu Tyr Cys Phe Leu  
 1780 1785 1790  
 Asp Thr Asp Asn Val Pro Lys Asp Ser Val Glu Phe Ala Phe Met Phe  
 1795 1800 1805  
 Glu Gln Ala His Glu Ala Val Ile His Gly His His Pro Ala Pro Glu  
 1810 1815 1820  
 Glu Asn Leu Gln Val Leu Ala Ala Leu Arg Leu Gln Tyr Leu Gln Gly  
 1825 1830 1835 1840  
 Asp Tyr Thr Leu His Ala Ala Ile Pro Pro Leu Glu Glu Val Tyr Ser  
 1845 1850 1855

Leu Gln Arg Leu Lys Ala Arg Ile Ser Gln Ser Thr Lys Thr Phe Thr  
 1860 1865 1870  
 Pro Cys Glu Arg Leu Glu Lys Arg Arg Thr Ser Phe Leu Glu Gly Thr  
 1875 1880 1885  
 Leu Arg Arg Ser Phe Arg Thr Gly Ser Val Val Arg Gln Lys Val Glu  
 1890 1895 1900  
 Glu Glu Gln Met Leu Asp Met Trp Ile Lys Glu Glu Val Ser Ser Ala  
 1905 1910 1915 1920  
 Arg Ala Ser Ile Ile Asp Lys Trp Arg Lys Phe Gln Gly Met Asn Gln  
 1925 1930 1935  
 Glu Gln Ala Met Ala Lys Tyr Met Ala Leu Ile Lys Glu Trp Pro Gly  
 1940 1945 1950  
 Tyr Gly Ser Thr Leu Phe Asp Val Glu Cys Lys Glu Gly Gly Phe Pro  
 1955 1960 1965  
 Gln Glu Leu Trp Leu Gly Val Ser Ala Asp Ala Val Ser Val Tyr Lys  
 1970 1975 1980  
 Arg Gly Glu Gly Arg Pro Leu Glu Val Phe Gln Tyr Glu His Ile Leu  
 1985 1990 1995 2000  
 Ser Phe Gly Ala Pro Leu Ala Asn Thr Tyr Lys Ile Val Val Asp Glu  
 2005 2010 2015  
 Arg Glu Leu Leu Phe Glu Thr Ser Glu Val Val Asp Val Ala Lys Leu  
 2020 2025 2030  
 Met Lys Ala Tyr Ile Ser Met Ile Val Lys Lys Arg Tyr Ser Thr Thr  
 2035 2040 2045  
 Arg Ser Ala Ser Ser Gln Gly Ser Ser Arg  
 2050 2055

<210> 121  
 <211> 461  
 <212> PRT  
 <213> Homo sapiens

<400> 121  
 Met Glu Lys Lys Cys Thr Leu Tyr Phe Leu Val Leu Leu Pro Phe Phe  
 1 5 10 15  
 Met Ile Leu Val Thr Ala Glu Leu Glu Glu Ser Pro Glu Asp Ser Ile  
 20 25 30  
 Gln Leu Gly Val Thr Arg Asn Lys Ile Met Thr Ala Gln Tyr Glu Cys  
 35 40 45  
 Tyr Gln Lys Ile Met Gln Asp Pro Ile Gln Gln Ala Glu Gly Val Tyr  
 50 55 60  
 Cys Asn Arg Thr Trp Asp Gly Trp Leu Cys Trp Asn Asp Val Ala Ala  
 65 70 75 80  
 Gly Thr Glu Ser Met Gln Leu Cys Pro Asp Tyr Phe Gln Asp Phe Asp  
 85 90 95  
 Pro Ser Glu Lys Val Thr Lys Ile Cys Asp Gln Asp Gly Asn Trp Phe  
 100 105 110  
 Arg His Pro Ala Ser Asn Arg Thr Trp Thr Asn Tyr Thr Gln Cys Asn  
 115 120 125  
 Val Asn Thr His Glu Lys Val Lys Thr Ala Leu Asn Leu Phe Tyr Leu  
 130 135 140  
 Thr Ile Ile Gly His Gly Leu Ser Ile Ala Ser Leu Leu Ile Ser Leu  
 145 150 155 160  
 Gly Ile Phe Phe Tyr Phe Lys Ser Leu Ser Cys Gln Arg Ile Thr Leu  
 165 170 175  
 His Lys Asn Leu Phe Phe Ser Phe Val Cys Asn Ser Val Val Thr Ile  
 180 185 190  
 Ile His Leu Thr Ala Val Ala Asn Asn Gln Ala Leu Val Ala Thr Asn  
 195 200 205  
 Pro Val Ser Cys Lys Val Ser Gln Phe Ile His Leu Tyr Leu Met Gly  
 210 215 220



Cys Asn Tyr Phe Trp Met Leu Cys Glu Gly Ile Tyr Leu His Thr Leu  
 225 230 235 240  
 Ile Val Val Ala Val Phe Ala Glu Lys Gln His Leu Met Trp Tyr Tyr  
 245 250 255  
 Phe Leu Gly Trp Gly Phe Pro Leu Ile Pro Ala Cys Ile His Ala Ile  
 260 265 270  
 Ala Arg Ser Leu Tyr Tyr Asn Asp Asn Cys Trp Ile Ser Ser Asp Thr  
 275 280 285  
 His Leu Leu Tyr Ile Ile His Gly Pro Ile Cys Ala Ala Leu Leu Val  
 290 295 300  
 Asn Leu Phe Phe Leu Leu Asn Ile Val Arg Val Leu Ile Thr Lys Leu  
 305 310 315 320  
 Lys Val Thr His Gln Ala Glu Ser Asn Leu Tyr Met Lys Ala Val Arg  
 325 330 335  
 Ala Thr Leu Ile Leu Val Pro Leu Leu Gly Ile Glu Phe Val Leu Ile  
 340 345 350  
 Pro Trp Arg Pro Glu Gly Lys Ile Ala Glu Glu Val Tyr Asp Tyr Ile  
 355 360 365  
 Met His Ile Leu Met His Phe Gln Gly Leu Leu Val Ser Thr Ile Phe  
 370 375 380  
 Cys Phe Phe Asn Gly Glu Val Gln Ala Ile Leu Arg Arg Asn Trp Asn  
 385 390 395 400  
 Gln Tyr Lys Ile Gln Phe Gly Asn Ser Phe Ser Asn Ser Glu Ala Leu  
 405 410 415  
 Arg Ser Ala Ser Tyr Thr Val Ser Thr Ile Ser Asp Gly Pro Gly Tyr  
 420 425 430  
 Ser His Asp Cys Pro Ser Glu His Leu Asn Gly Lys Ser Ile His Asp  
 435 440 445  
 Ile Glu Asn Val Leu Leu Lys Pro Glu Asn Leu Tyr Asn  
 450 455 460

<210> 122  
 <211> 610  
 <212> PRT  
 <213> Homo sapiens

<400> 122  
 Met Ile Ala Ser Gln Phe Leu Ser Ala Leu Thr Leu Val Leu Leu Ile  
 1 5 10 15  
 Lys Glu Ser Gly Ala Trp Ser Tyr Asn Thr Ser Thr Glu Ala Met Thr  
 20 25 30  
 Tyr Asp Glu Ala Ser Ala Tyr Cys Gln Gln Arg Tyr Thr His Leu Val  
 35 40 45  
 Ala Ile Gln Asn Lys Glu Glu Ile Glu Tyr Leu Asn Ser Ile Leu Ser  
 50 55 60  
 Tyr Ser Pro Ser Tyr Tyr Trp Ile Gly Ile Arg Lys Val Asn Asn Val  
 65 70 75 80  
 Trp Val Trp Val Gly Thr Gln Lys Pro Leu Thr Glu Glu Ala Lys Asn  
 85 90 95  
 Trp Ala Pro Gly Glu Pro Asn Asn Arg Gln Lys Asp Glu Asp Cys Val  
 100 105 110  
 Glu Ile Tyr Ile Lys Arg Glu Lys Asp Val Gly Met Trp Asn Asp Glu  
 115 120 125  
 Arg Cys Ser Lys Lys Lys Leu Ala Leu Cys Tyr Thr Ala Ala Cys Thr  
 130 135 140  
 Asn Thr Ser Cys Ser Gly His Gly Glu Cys Val Glu Thr Ile Asn Asn  
 145 150 155 160  
 Tyr Thr Cys Lys Cys Asp Pro Gly Phe Ser Gly Leu Lys Cys Glu Gln  
 165 170 175  
 Ile Val Asn Cys Thr Ala Leu Glu Ser Pro Glu His Gly Ser Leu Val  
 180 185 190

Cys Ser His Pro Leu Gly Asn Phe Ser Tyr Asn Ser Ser Cys Ser Ile  
 195 200 205  
 Ser Cys Asp Arg Gly Tyr Leu Pro Ser Ser Met Glu Thr Met Gln Cys  
 210 215 220  
 Met Ser Ser Gly Glu Trp Ser Ala Pro Ile Pro Ala Cys Asn Val Val  
 225 230 235 240  
 Glu Cys Asp Ala Val Thr Asn Pro Ala Asn Gly Phe Val Glu Cys Phe  
 245 250 255  
 Gln Asn Pro Gly Ser Phe Pro Trp Asn Thr Thr Cys Thr Phe Asp Cys  
 260 265 270  
 Glu Glu Gly Phe Glu Leu Met Gly Ala Gln Ser Leu Gln Cys Thr Ser  
 275 280 285  
 Ser Gly Asn Trp Asp Asn Glu Lys Pro Thr Cys Lys Ala Val Thr Cys  
 290 295 300  
 Arg Ala Val Arg Gln Pro Gln Asn Gly Ser Val Arg Cys Ser His Ser  
 305 310 315 320  
 Pro Ala Gly Glu Phe Thr Phe Lys Ser Ser Cys Asn Phe Thr Cys Glu  
 325 330 335  
 Glu Gly Phe Met Leu Gln Gly Pro Ala Gln Val Glu Cys Thr Thr Gln  
 340 345 350  
 Gly Gln Trp Thr Gln Gln Ile Pro Val Cys Glu Ala Phe Gln Cys Thr  
 355 360 365  
 Ala Leu Ser Asn Pro Glu Arg Gly Tyr Met Asn Cys Leu Pro Ser Ala  
 370 375 380  
 Ser Gly Ser Phe Arg Tyr Gly Ser Ser Cys Glu Phe Ser Cys Glu Gln  
 385 390 395 400  
 Gly Phe Val Leu Lys Gly Ser Lys Arg Leu Gln Cys Gly Pro Thr Gly  
 405 410 415  
 Glu Trp Asp Asn Glu Lys Pro Thr Cys Glu Ala Val Arg Cys Asp Ala  
 420 425 430  
 Val His Gln Pro Pro Lys Gly Leu Val Arg Cys Ala His Ser Pro Ile  
 435 440 445  
 Gly Glu Phe Thr Tyr Lys Ser Ser Cys Ala Phe Ser Cys Glu Glu Gly  
 450 455 460  
 Phe Glu Leu Tyr Gly Ser Thr Gln Leu Glu Cys Thr Ser Gln Gly Gln  
 465 470 475 480  
 Trp Thr Glu Glu Val Pro Ser Cys Gln Val Val Lys Cys Ser Ser Leu  
 485 490 495  
 Ala Val Pro Gly Lys Ile Asn Met Ser Cys Ser Gly Glu Pro Val Phe  
 500 505 510  
 Gly Thr Val Cys Lys Phe Ala Cys Pro Glu Gly Trp Thr Leu Asn Gly  
 515 520 525  
 Ser Ala Ala Arg Thr Cys Gly Ala Thr Gly His Trp Ser Gly Leu Leu  
 530 535 540  
 Pro Thr Cys Glu Ala Pro Thr Glu Ser Asn Ile Pro Leu Val Ala Gly  
 545 550 555 560  
 Leu Ser Ala Ala Gly Leu Ser Leu Leu Thr Leu Ala Pro Phe Leu Leu  
 565 570 575  
 Trp Leu Arg Lys Cys Leu Arg Lys Ala Lys Lys Phe Val Pro Ala Ser  
 580 585 590  
 Ser Cys Gln Ser Leu Glu Ser Asp Gly Ser Tyr Gln Lys Pro Ser Tyr  
 595 600 605  
 Ile Leu  
 610

<210> 123

<211> 352

<212> PRT

<213> Homo sapiens

<400> 123  
 Met Glu Gly Ile Ser Ile Tyr Thr Ser Asp Asn Tyr Thr Glu Glu Met  
 1 5 10 15  
 Gly Ser Gly Asp Tyr Asp Ser Met Lys Glu Pro Cys Phe Arg Glu Glu  
 20 25 30  
 Asn Ala Asn Phe Asn Lys Ile Phe Leu Pro Thr Ile Tyr Ser Ile Ile  
 35 40 45  
 Phe Leu Thr Gly Ile Val Gly Asn Gly Leu Val Ile Leu Val Met Gly  
 50 55 60  
 Tyr Gln Lys Lys Leu Arg Ser Met Thr Asp Lys Tyr Arg Leu His Leu  
 65 70 75 80  
 Ser Val Ala Asp Leu Leu Phe Val Ile Thr Leu Pro Phe Trp Ala Val  
 85 90 95  
 Asp Ala Val Ala Asn Trp Tyr Phe Gly Asn Phe Leu Cys Lys Ala Val  
 100 105 110  
 His Val Ile Tyr Thr Val Asn Leu Tyr Ser Ser Val Leu Ile Leu Ala  
 115 120 125  
 Phe Ile Ser Leu Asp Arg Tyr Leu Ala Ile Val His Ala Thr Asn Ser  
 130 135 140  
 Gln Arg Pro Arg Lys Leu Ala Glu Lys Val Val Tyr Val Gly Val  
 145 150 155 160  
 Trp Ile Pro Ala Leu Leu Leu Thr Ile Pro Asp Phe Ile Phe Ala Asn  
 165 170 175  
 Val Ser Glu Ala Asp Asp Arg Tyr Ile Cys Asp Arg Phe Tyr Pro Asn  
 180 185 190  
 Asp Leu Trp Val Val Val Phe Gln Phe Gln His Ile Met Val Gly Leu  
 195 200 205  
 Ile Leu Pro Gly Ile Val Ile Leu Ser Cys Tyr Cys Ile Ile Ile Ser  
 210 215 220  
 Lys Leu Ser His Ser Lys Gly His Gln Lys Arg Lys Ala Leu Lys Thr  
 225 230 235 240  
 Thr Val Ile Leu Ile Leu Ala Phe Phe Ala Cys Trp Leu Pro Tyr Tyr  
 245 250 255  
 Ile Gly Ile Ser Ile Asp Ser Phe Ile Leu Leu Glu Ile Ile Lys Gln  
 260 265 270  
 Gly Cys Glu Phe Glu Asn Thr Val His Lys Trp Ile Ser Ile Thr Glu  
 275 280 285  
 Ala Leu Ala Phe Phe His Cys Cys Leu Asn Pro Ile Leu Tyr Ala Phe  
 290 295 300  
 Leu Gly Ala Lys Phe Lys Thr Ser Ala Gln His Ala Leu Thr Ser Val  
 305 310 315 320  
 Ser Arg Gly Ser Ser Leu Lys Ile Leu Ser Lys Gly Lys Arg Gly Gly  
 325 330 335  
 His Ser Ser Val Ser Thr Glu Ser Glu Ser Ser Ser Phe His Ser Ser  
 340 345 350

<210> 124  
 <211> 184  
 <212> PRT  
 <213> Homo sapiens

<400> 124  
 Met Lys Ser Val Leu Leu Leu Thr Thr Leu Leu Val Pro Ala His Leu  
 1 5 10 15  
 Val Ala Ala Trp Ser Asn Asn Tyr Ala Val Asp Cys Pro Gln His Cys  
 20 25 30  
 Asp Ser Ser Glu Cys Lys Ser Ser Pro Arg Cys Lys Arg Thr Val Leu  
 35 40 45  
 Asp Asp Cys Gly Cys Cys Arg Val Cys Ala Ala Gly Arg Gly Glu Thr  
 50 55 60

Cys Tyr Arg Thr Val Ser Gly Met Asp Gly Met Lys Cys Gly Pro Gly  
65 70 75 80  
Leu Arg Cys Gln Pro Ser Asn Gly Glu Asp Pro Phe Gly Glu Glu Phe  
85 90 95  
Gly Ile Cys Lys Asp Cys Pro Tyr Gly Thr Phe Gly Met Asp Cys Arg  
100 105 110  
Glu Thr Cys Asn Cys Gln Ser Gly Ile Cys Asp Arg Gly Thr Gly Lys  
115 120 125  
Cys Leu Lys Phe Pro Phe Phe Gln Tyr Ser Val Thr Lys Ser Ser Asn  
130 135 140  
Arg Phe Val Ser Leu Thr Glu His Asp Met Ala Ser Gly Asp Gly Asn  
145 150 155 160  
Ile Val Arg Glu Glu Val Val Lys Glu Asn Ala Ala Gly Ser Pro Val  
165 170 175  
Met Arg Lys Trp Leu Asn Pro Arg  
180

<210> 125  
<211> 1496  
<212> PRT  
<213> Homo sapiens

<400> 125  
Ser Arg Pro Trp Trp Leu Arg Ala Ser Glu Arg Pro Ser Ala Pro Ser  
1 5 10 15  
Ala Met Ala Lys Arg Ser Arg Gly Pro Gly Arg Arg Cys Leu Leu Ala  
20 25 30  
Leu Val Leu Phe Cys Ala Trp Gly Thr Leu Ala Val Val Ala Gln Lys  
35 40 45  
Pro Gly Ala Gly Cys Pro Ser Arg Cys Leu Cys Phe Arg Thr Thr Val  
50 55 60  
Arg Cys Met His Leu Leu Leu Glu Ala Val Pro Ala Val Ala Pro Gln  
65 70 75 80  
Thr Ser Ile Leu Asp Leu Arg Phe Asn Arg Ile Arg Glu Ile Gln Pro  
85 90 95  
Gly Ala Phe Arg Arg Leu Arg Asn Leu Asn Thr Leu Leu Leu Asn Asn  
100 105 110  
Asn Gln Ile Lys Arg Ile Pro Ser Gly Ala Phe Glu Asp Leu Glu Asn  
115 120 125  
Leu Lys Tyr Leu Tyr Leu Tyr Lys Asn Glu Ile Gln Ser Ile Asp Arg  
130 135 140  
Gln Ala Phe Lys Gly Leu Ala Ser Leu Glu Gln Leu Tyr Leu His Phe  
145 150 155 160  
Asn Gln Ile Glu Thr Leu Asp Pro Asp Ser Phe Gln His Leu Pro Lys  
165 170 175  
Leu Glu Arg Leu Phe Leu His Asn Asn Arg Ile Thr His Leu Val Pro  
180 185 190  
Gly Thr Phe Asn His Leu Glu Ser Met Lys Arg Leu Arg Leu Asp Ser  
195 200 205  
Asn Thr Leu His Cys Asp Cys Glu Ile Leu Trp Leu Ala Asp Leu Leu  
210 215 220  
Lys Thr Tyr Ala Glu Ser Gly Asn Ala Gln Ala Ala Ala Ile Cys Glu  
225 230 235 240  
Tyr Pro Arg Arg Ile Gln Gly Arg Ser Val Ala Thr Ile Thr Pro Glu  
245 250 255  
Glu Leu Asn Cys Glu Arg Pro Arg Ile Thr Ser Glu Pro Gln Asp Ala  
260 265 270  
Asp Val Thr Ser Gly Asn Thr Val Tyr Phe Thr Cys Arg Ala Glu Gly  
275 280 285  
Asn Pro Lys Pro Glu Ile Ile Trp Leu Arg Asn Asn Asn Glu Leu Ser  
290 295 300

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Lys | Thr | Asp | Ser | Arg | Leu | Asn | Leu | Leu | Asp | Asp | Gly | Thr | Leu | Met |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |
| Ile | Gln | Asn | Thr | Gln | Glu | Thr | Asp | Gln | Gly | Ile | Tyr | Gln | Cys | Met | Ala |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     |     | 335 |
| Lys | Asn | Val | Ala | Gly | Glu | Val | Lys | Thr | Gln | Glu | Val | Thr | Leu | Arg | Tyr |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Phe | Gly | Ser | Pro | Ala | Arg | Pro | Thr | Phe | Val | Ile | Gln | Pro | Gln | Asn | Thr |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Glu | Val | Leu | Val | Gly | Glu | Ser | Val | Thr | Leu | Glu | Cys | Ser | Ala | Thr | Gly |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| His | Pro | Pro | Pro | Arg | Ile | Ser | Trp | Thr | Arg | Gly | Asp | Arg | Thr | Pro | Leu |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Pro | Val | Asp | Pro | Arg | Val | Asn | Ile | Thr | Pro | Ser | Gly | Gly | Leu | Tyr | Ile |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     |     | 415 |
| Gln | Asn | Val | Val | Gln | Gly | Asp | Ser | Gly | Glu | Tyr | Ala | Cys | Ser | Ala | Thr |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Asn | Asn | Ile | Asp | Ser | Val | His | Ala | Thr | Ala | Phe | Ile | Ile | Val | Gln | Ala |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Leu | Pro | Gln | Phe | Thr | Val | Thr | Pro | Gln | Asp | Arg | Val | Val | Ile | Glu | Gly |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |
| Gln | Thr | Val | Asp | Phe | Gln | Cys | Glu | Ala | Lys | Gly | Asn | Pro | Pro | Pro | Val |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |
| Ile | Ala | Trp | Thr | Lys | Gly | Gly | Ser | Gln | Leu | Ser | Val | Asp | Arg | Arg | His |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     |     | 495 |
| Leu | Val | Leu | Ser | Ser | Gly | Thr | Leu | Arg | Ile | Ser | Gly | Val | Ala | Leu | His |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |
| Asp | Gln | Gly | Gln | Tyr | Glu | Cys | Gln | Ala | Val | Asn | Ile | Ile | Gly | Ser | Gln |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |
| Lys | Val | Val | Ala | His | Leu | Thr | Val | Gln | Pro | Arg | Val | Thr | Pro | Val | Phe |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |
| Ala | Ser | Ile | Pro | Ser | Asp | Thr | Thr | Val | Glu | Val | Gly | Ala | Asn | Val | Gln |
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |
| Leu | Pro | Cys | Ser | Ser | Gln | Gly | Glu | Pro | Glu | Pro | Ala | Ile | Thr | Trp | Asn |
|     |     |     |     | 565 |     |     |     |     | 570 |     |     |     |     | 575 |     |
| Lys | Asp | Gly | Val | Gln | Val | Thr | Glu | Ser | Gly | Lys | Phe | His | Ile | Ser | Pro |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |
| Glu | Gly | Phe | Leu | Thr | Ile | Asn | Asp | Val | Gly | Pro | Ala | Asp | Ala | Gly | Arg |
|     |     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |
| Tyr | Glu | Cys | Val | Ala | Arg | Asn | Thr | Ile | Gly | Ser | Ala | Ser | Val | Ser | Met |
|     | 610 |     |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |
| Val | Leu | Ser | Val | Asn | Val | Pro | Asp | Val | Ser | Arg | Asn | Gly | Asp | Pro | Phe |
| 625 |     |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     | 640 |
| Val | Ala | Thr | Ser | Ile | Val | Glu | Ala | Ile | Ala | Thr | Val | Asp | Arg | Ala | Ile |
|     |     |     |     | 645 |     |     |     |     | 650 |     |     |     |     | 655 |     |
| Asn | Ser | Thr | Arg | Thr | His | Leu | Phe | Asp | Ser | Arg | Pro | Arg | Ser | Pro | Asn |
|     |     |     | 660 |     |     |     |     | 665 |     |     |     |     | 670 |     |     |
| Asp | Leu | Leu | Ala | Leu | Phe | Arg | Tyr | Pro | Arg | Asp | Pro | Tyr | Thr | Val | Glu |
|     |     | 675 |     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |
| Gln | Ala | Arg | Ala | Gly | Glu | Ile | Phe | Glu | Arg | Thr | Leu | Gln | Leu | Ile | Gln |
|     | 690 |     |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     |
| Glu | His | Val | Gln | His | Gly | Leu | Met | Val | Asp | Leu | Asn | Gly | Thr | Ser | Tyr |
| 705 |     |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     | 720 |
| His | Tyr | Asn | Asp | Leu | Val | Ser | Pro | Gln | Tyr | Leu | Asn | Leu | Ile | Ala | Asn |
|     |     |     |     | 725 |     |     |     |     | 730 |     |     |     |     | 735 |     |
| Leu | Ser | Gly | Cys | Thr | Ala | His | Arg | Arg | Val | Asn | Asn | Cys | Ser | Asp | Met |
|     |     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |     |     |
| Cys | Phe | His | Gln | Lys | Tyr | Arg | Thr | His | Asp | Gly | Thr | Cys | Asn | Asn | Leu |
|     |     | 755 |     |     |     |     | 760 |     |     |     |     | 765 |     |     |     |
| Gln | His | Pro | Met | Trp | Gly | Ala | Ser | Leu | Thr | Ala | Phe | Glu | Arg | Leu | Leu |
|     | 770 |     |     |     |     | 775 |     |     |     |     |     | 780 |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|
| Lys | Ser | Val | Tyr | Glu | Asn | Gly | Phe | Asn | Thr | Pro | Arg | Gly | Ile | Asn | Pro | 785  | 790  | 795  | 800  |
| His | Arg | Leu | Tyr | Asn | Gly | His | Ala | Leu | Pro | Met | Pro | Arg | Leu | Val | Ser | 805  | 810  | 815  |      |
| Thr | Thr | Leu | Ile | Gly | Thr | Glu | Thr | Val | Thr | Pro | Asp | Glu | Gln | Phe | Thr | 820  | 825  | 830  |      |
| His | Met | Leu | Met | Gln | Trp | Gly | Gln | Phe | Leu | Asp | His | Asp | Leu | Asp | Ser | 835  | 840  | 845  |      |
| Thr | Val | Val | Ala | Leu | Ser | Gln | Ala | Arg | Phe | Ser | Asp | Gly | Gln | His | Cys | 850  | 855  | 860  |      |
| Ser | Asn | Val | Cys | Ser | Asn | Asp | Pro | Pro | Cys | Phe | Ser | Val | Met | Ile | Pro | 865  | 870  | 875  | 880  |
| Pro | Asn | Asp | Ser | Arg | Ala | Arg | Ser | Gly | Ala | Arg | Cys | Met | Phe | Phe | Val | 885  | 890  | 895  |      |
| Arg | Ser | Ser | Pro | Val | Cys | Gly | Ser | Gly | Met | Thr | Ser | Leu | Leu | Met | Asn | 900  | 905  | 910  |      |
| Ser | Val | Tyr | Pro | Arg | Glu | Gln | Ile | Asn | Gln | Leu | Thr | Ser | Tyr | Ile | Asp | 915  | 920  | 925  |      |
| Ala | Ser | Asn | Val | Tyr | Gly | Ser | Thr | Glu | His | Glu | Ala | Arg | Ser | Ile | Arg | 930  | 935  | 940  |      |
| Asp | Leu | Ala | Ser | His | Arg | Gly | Leu | Leu | Arg | Gln | Gly | Ile | Val | Gln | Arg | 945  | 950  | 955  | 960  |
| Ser | Gly | Lys | Pro | Leu | Leu | Pro | Phe | Ala | Thr | Gly | Pro | Pro | Thr | Glu | Cys | 965  | 970  | 975  |      |
| Met | Arg | Asp | Glu | Asn | Glu | Ser | Pro | Ile | Pro | Cys | Phe | Leu | Ala | Gly | Asp | 980  | 985  | 990  |      |
| His | Arg | Ala | Asn | Glu | Gln | Leu | Gly | Leu | Thr | Ser | Met | His | Thr | Leu | Trp | 995  | 1000 | 1005 |      |
| Phe | Arg | Glu | His | Asn | Arg | Ile | Ala | Thr | Glu | Leu | Leu | Lys | Leu | Asn | Pro | 1010 | 1015 | 1020 |      |
| His | Trp | Asp | Gly | Asp | Thr | Ile | Tyr | Tyr | Glu | Thr | Arg | Lys | Ile | Val | Gly | 1025 | 1030 | 1035 | 1040 |
| Ala | Glu | Ile | Gln | His | Ile | Thr | Tyr | Gln | His | Trp | Leu | Pro | Lys | Ile | Leu | 1045 | 1050 | 1055 |      |
| Gly | Glu | Val | Gly | Met | Arg | Thr | Leu | Gly | Glu | Tyr | His | Gly | Tyr | Asp | Pro | 1060 | 1065 | 1070 |      |
| Gly | Ile | Asn | Ala | Gly | Ile | Phe | Asn | Ala | Phe | Ala | Thr | Ala | Ala | Phe | Arg | 1075 | 1080 | 1085 |      |
| Phe | Gly | His | Thr | Leu | Val | Asn | Pro | Leu | Leu | Tyr | Arg | Leu | Asp | Glu | Asn | 1090 | 1095 | 1100 |      |
| Phe | Gln | Pro | Ile | Ala | Gln | Asp | His | Leu | Pro | Leu | His | Lys | Ala | Phe | Phe | 1105 | 1110 | 1115 | 1120 |
| Ser | Pro | Phe | Arg | Ile | Val | Asn | Glu | Gly | Gly | Ile | Asp | Pro | Leu | Leu | Arg | 1125 | 1130 | 1135 |      |
| Gly | Leu | Phe | Gly | Val | Ala | Gly | Lys | Met | Arg | Val | Pro | Ser | Gln | Leu | Leu | 1140 | 1145 | 1150 |      |
| Asn | Thr | Glu | Leu | Thr | Glu | Arg | Leu | Phe | Ser | Met | Ala | His | Thr | Val | Ala | 1155 | 1160 | 1165 |      |
| Leu | Asp | Leu | Ala | Ala | Ile | Asn | Ile | Gln | Arg | Gly | Arg | Asp | His | Gly | Ile | 1170 | 1175 | 1180 |      |
| Pro | Pro | Tyr | His | Asp | Tyr | Arg | Val | Tyr | Cys | Asn | Leu | Ser | Ala | Ala | His | 1185 | 1190 | 1195 | 1200 |
| Thr | Phe | Glu | Asp | Leu | Lys | Asn | Glu | Ile | Lys | Asn | Pro | Glu | Ile | Arg | Glu | 1205 | 1210 | 1215 |      |
| Lys | Leu | Lys | Arg | Leu | Tyr | Gly | Ser | Thr | Leu | Asn | Ile | Asp | Leu | Phe | Pro | 1220 | 1225 | 1230 |      |
| Ala | Leu | Val | Val | Glu | Asp | Leu | Val | Pro | Gly | Ser | Arg | Leu | Gly | Pro | Thr | 1235 | 1240 | 1245 |      |
| Leu | Met | Cys | Leu | Leu | Ser | Thr | Gln | Phe | Lys | Arg | Leu | Arg | Asp | Gly | Asp | 1250 | 1255 | 1260 |      |

Arg Leu Trp Tyr Glu Asn Pro Gly Val Phe Ser Pro Ala Gln Leu Thr  
 1265 1270 1275 1280  
 Gln Ile Lys Gln Thr Ser Leu Ala Arg Ile Leu Cys Asp Asn Ala Asp  
 1285 1290 1295  
 Asn Ile Thr Arg Val Gln Ser Asp Val Phe Arg Val Ala Glu Phe Pro  
 1300 1305 1310  
 His Gly Tyr Gly Ser Cys Asp Glu Ile Pro Arg Val Asp Leu Arg Val  
 1315 1320 1325  
 Trp Gln Asp Cys Cys Glu Asp Cys Arg Thr Arg Gly Gln Phe Asn Ala  
 1330 1335 1340  
 Phe Ser Tyr His Phe Arg Gly Arg Arg Ser Leu Glu Phe Ser Tyr Gln  
 1345 1350 1355 1360  
 Glu Asp Lys Pro Thr Lys Lys Thr Arg Pro Arg Lys Ile Pro Ser Val  
 1365 1370 1375  
 Gly Arg Gln Gly Glu His Leu Ser Asn Ser Thr Ser Ala Phe Ser Thr  
 1380 1385 1390  
 Arg Ser Asp Ala Ser Gly Thr Asn Asp Phe Arg Glu Phe Val Leu Glu  
 1395 1400 1405  
 Met Gln Lys Thr Ile Thr Asp Leu Arg Thr Gln Ile Lys Lys Leu Glu  
 1410 1415 1420  
 Ser Arg Leu Ser Thr Thr Glu Cys Val Asp Ala Gly Gly Glu Ser His  
 1425 1430 1435 1440  
 Ala Asn Asn Thr Lys Trp Lys Lys Asp Ala Cys Thr Ile Cys Glu Cys  
 1445 1450 1455  
 Lys Asp Gly Gln Val Thr Cys Phe Val Glu Ala Cys Pro Pro Ala Thr  
 1460 1465 1470  
 Cys Ala Val Pro Val Asn Ile Pro Gly Ala Cys Cys Pro Val Cys Leu  
 1475 1480 1485  
 Gln Lys Arg Ala Glu Glu Lys Pro  
 1490 1495

<210> 126  
 <211> 1165  
 <212> PRT  
 <213> Homo sapiens

<400> 126  
 Met Ala Asn Asp Ser Pro Ala Lys Ser Leu Val Asp Ile Asp Leu Ser  
 1 5 10 15  
 Ser Leu Arg Asp Pro Ala Gly Ile Phe Glu Leu Val Glu Val Val Gly  
 20 25 30  
 Asn Gly Thr Tyr Gly Gln Val Tyr Lys Gly Arg His Val Lys Thr Gly  
 35 40 45  
 Gln Leu Ala Ala Ile Lys Val Met Asp Val Thr Glu Asp Glu Glu Glu  
 50 55 60  
 Glu Ile Lys Leu Glu Ile Asn Met Leu Lys Lys Tyr Ser His His Arg  
 65 70 75 80  
 Asn Ile Ala Thr Tyr Tyr Gly Ala Phe Ile Lys Lys Ser Pro Pro Gly  
 85 90 95  
 His Asp Asp Gln Leu Trp Leu Val Met Glu Phe Cys Gly Ala Gly Ser  
 100 105 110  
 Ile Thr Asp Leu Val Lys Asn Thr Lys Gly Asn Thr Leu Lys Glu Asp  
 115 120 125  
 Trp Ile Ala Tyr Ile Ser Arg Glu Ile Leu Arg Gly Leu Ala His Leu  
 130 135 140  
 His Ile His His Val Ile His Arg Asp Ile Lys Gly Gln Asn Val Leu  
 145 150 155 160  
 Leu Thr Glu Asn Ala Glu Val Lys Leu Val Asp Phe Gly Val Ser Ala  
 165 170 175  
 Gln Leu Asp Arg Thr Val Gly Arg Arg Asn Thr Phe Ile Gly Thr Pro  
 180 185 190

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Tyr | Trp | Met | Ala | Pro | Glu | Val | Ile | Ala | Cys | Asp | Glu | Asn | Pro | Asp | Ala |  |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |  |
| Thr | Tyr | Asp | Tyr | Arg | Ser | Asp | Leu | Trp | Ser | Cys | Gly | Ile | Thr | Ala | Ile |  |
|     |     | 210 |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |  |
| Glu | Met | Ala | Glu | Gly | Ala | Pro | Pro | Leu | Cys | Asp | Met | His | Pro | Met | Arg |  |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Ala | Leu | Phe | Leu | Ile | Pro | Arg | Asn | Pro | Pro | Pro | Arg | Leu | Lys | Ser | Lys |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     |     | 255 |  |
| Lys | Trp | Ser | Lys | Lys | Phe | Phe | Ser | Phe | Ile | Glu | Gly | Cys | Leu | Val | Lys |  |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |  |
| Asn | Tyr | Met | Gln | Arg | Pro | Ser | Thr | Glu | Gln | Leu | Leu | Lys | His | Pro | Phe |  |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     |     | 285 |     |     |  |
| Ile | Arg | Asp | Gln | Pro | Asn | Glu | Arg | Gln | Val | Arg | Ile | Gln | Leu | Lys | Asp |  |
|     |     | 290 |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |  |
| His | Ile | Asp | Arg | Thr | Arg | Lys | Lys | Arg | Gly | Glu | Lys | Asp | Glu | Thr | Glu |  |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |  |
| Tyr | Glu | Tyr | Ser | Gly | Ser | Glu | Glu | Glu | Glu | Glu | Glu | Val | Pro | Glu | Gln |  |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     |     | 335 |  |
| Glu | Gly | Glu | Pro | Ser | Ser | Ile | Val | Asn | Val | Pro | Gly | Glu | Ser | Thr | Leu |  |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |  |
| Arg | Arg | Asp | Phe | Leu | Arg | Leu | Gln | Glu | Asn | Lys | Glu | Arg | Ser | Glu |     |  |
|     |     | 355 |     |     |     |     | 360 |     |     |     | 365 |     |     |     |     |  |
| Ala | Leu | Arg | Arg | Gln | Gln | Leu | Leu | Gln | Glu | Gln | Gln | Leu | Arg | Glu | Gln |  |
|     |     | 370 |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |  |
| Glu | Glu | Tyr | Lys | Arg | Gln | Leu | Leu | Ala | Glu | Arg | Gln | Lys | Arg | Ile | Glu |  |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |  |
| Gln | Gln | Lys | Glu | Gln | Arg | Arg | Arg | Leu | Glu | Glu | Gln | Gln | Arg | Arg | Glu |  |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     |     | 415 |  |
| Arg | Glu | Ala | Arg | Arg | Gln | Gln | Glu | Arg | Glu | Gln | Arg | Arg | Arg | Glu | Gln |  |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |  |
| Glu | Glu | Lys | Arg | Arg | Leu | Glu | Glu | Leu | Glu | Arg | Arg | Arg | Lys | Glu | Glu |  |
|     |     | 435 |     |     |     | 440 |     |     |     |     | 445 |     |     |     |     |  |
| Glu | Glu | Arg | Arg | Arg | Ala | Glu | Glu | Glu | Lys | Arg | Arg | Val | Glu | Arg | Glu |  |
|     |     | 450 |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |  |
| Gln | Glu | Tyr | Ile | Arg | Arg | Gln | Leu | Glu | Glu | Glu | Gln | Arg | His | Leu | Glu |  |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |  |
| Val | Leu | Gln | Gln | Gln | Leu | Leu | Gln | Glu | Gln | Ala | Met | Leu | Leu | His | Asp |  |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |  |
| His | Arg | Arg | Pro | His | Pro | Gln | His | Ser | Gln | Gln | Pro | Pro | Pro | Pro | Gln |  |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |  |
| Gln | Glu | Arg | Ser | Lys | Pro | Ser | Phe | His | Ala | Pro | Glu | Pro | Lys | Ala | His |  |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |  |
| Tyr | Glu | Pro | Ala | Asp | Arg | Ala | Arg | Glu | Val | Pro | Val | Arg | Thr | Thr | Ser |  |
|     |     | 530 |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |  |
| Arg | Ser | Pro | Val | Leu | Ser | Arg | Arg | Asp | Ser | Pro | Leu | Gln | Gly | Ser | Gly |  |
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |  |
| Gln | Gln | Asn | Ser | Gln | Ala | Gly | Gln | Arg | Asn | Ser | Thr | Ser | Ile | Glu | Pro |  |
|     |     |     |     | 565 |     |     |     |     | 570 |     |     |     |     | 575 |     |  |
| Arg | Leu | Leu | Trp | Glu | Arg | Val | Glu | Lys | Leu | Val | Pro | Arg | Pro | Gly | Ser |  |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |  |
| Gly | Ser | Ser | Ser | Gly | Ser | Ser | Asn | Ser | Gly | Ser | Gln | Pro | Gly | Ser | His |  |
|     |     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |  |
| Pro | Gly | Ser | Gln | Ser | Gly | Ser | Gly | Glu | Arg | Phe | Arg | Val | Arg | Ser | Ser |  |
|     |     | 610 |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |  |
| Ser | Lys | Ser | Glu | Gly | Ser | Pro | Ser | Gln | Arg | Leu | Glu | Asn | Ala | Val | Lys |  |
| 625 |     |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     | 640 |  |
| Lys | Pro | Glu | Asp | Lys | Lys | Glu | Val | Phe | Arg | Pro | Leu | Lys | Pro | Ala | Gly |  |
|     |     |     |     | 645 |     |     |     |     | 650 |     |     |     |     | 655 |     |  |
| Glu | Val | Asp | Leu | Thr | Ala | Leu | Ala | Lys | Glu | Leu | Arg | Ala | Val | Glu | Asp |  |
|     |     |     | 660 |     |     |     |     | 665 |     |     |     |     | 670 |     |     |  |



|      |      |      |     |      |      |      |      |      |      |      |      |      |      |      |      |  |  |
|------|------|------|-----|------|------|------|------|------|------|------|------|------|------|------|------|--|--|
| Val  | Arg  | Pro  | Pro | His  | Lys  | Val  | Thr  | Asp  | Tyr  | Ser  | Ser  | Ser  | Ser  | Glu  | Glu  |  |  |
|      |      | 675  |     |      |      |      | 680  |      |      |      |      | 685  |      |      |      |  |  |
| Ser  | Gly  | Thr  | Thr | Asp  | Glu  | Glu  | Asp  | Asp  | Asp  | Val  | Glu  | Gln  | Glu  | Gly  | Ala  |  |  |
|      | 690  |      |     |      |      | 695  |      |      |      |      | 700  |      |      |      |      |  |  |
| Asp  | Glu  | Ser  | Thr | Ser  | Gly  | Pro  | Glu  | Asp  | Thr  | Arg  | Ala  | Ala  | Ser  | Ser  | Leu  |  |  |
| 705  |      |      |     |      | 710  |      |      |      |      | 715  |      |      |      |      | 720  |  |  |
| Asn  | Leu  | Ser  | Asn | Gly  | Glu  | Thr  | Glu  | Ser  | Val  | Lys  | Thr  | Met  | Ile  | Val  | His  |  |  |
|      |      |      |     | 725  |      |      |      |      | 730  |      |      |      |      | 735  |      |  |  |
| Asp  | Asp  | Val  | Glu | Ser  | Glu  | Pro  | Ala  | Met  | Thr  | Pro  | Ser  | Lys  | Glu  | Gly  | Thr  |  |  |
|      |      | 740  |     |      |      |      |      | 745  |      |      |      |      | 750  |      |      |  |  |
| Leu  | Ile  | Val  | Arg | Gln  | Thr  | Gln  | Ser  | Ala  | Ser  | Ser  | Thr  | Leu  | Gln  | Lys  | His  |  |  |
|      | 755  |      |     |      |      |      | 760  |      |      |      |      |      | 765  |      |      |  |  |
| Lys  | Ser  | Ser  | Ser | Ser  | Phe  | Thr  | Pro  | Phe  | Ile  | Asp  | Pro  | Arg  | Leu  | Leu  | Gln  |  |  |
|      | 770  |      |     |      |      | 775  |      |      |      |      | 780  |      |      |      |      |  |  |
| Ile  | Ser  | Pro  | Ser | Ser  | Gly  | Thr  | Thr  | Val  | Thr  | Ser  | Val  | Val  | Gly  | Phe  | Ser  |  |  |
| 785  |      |      |     |      | 790  |      |      |      |      | 795  |      |      |      |      | 800  |  |  |
| Cys  | Asp  | Gly  | Met | Arg  | Pro  | Glu  | Ala  | Ile  | Arg  | Gln  | Asp  | Pro  | Thr  | Arg  | Lys  |  |  |
|      |      |      |     | 805  |      |      |      |      | 810  |      |      |      |      |      | 815  |  |  |
| Gly  | Ser  | Val  | Val | Asn  | Val  | Asn  | Pro  | Thr  | Asn  | Thr  | Arg  | Pro  | Gln  | Ser  | Asp  |  |  |
|      |      | 820  |     |      |      |      |      | 825  |      |      |      |      | 830  |      |      |  |  |
| Thr  | Pro  | Glu  | Ile | Arg  | Lys  | Tyr  | Lys  | Lys  | Arg  | Phe  | Asn  | Ser  | Glu  | Ile  | Leu  |  |  |
|      | 835  |      |     |      |      |      | 840  |      |      |      |      |      | 845  |      |      |  |  |
| Cys  | Ala  | Ala  | Leu | Trp  | Gly  | Val  | Asn  | Leu  | Leu  | Val  | Gly  | Thr  | Glu  | Ser  | Gly  |  |  |
|      | 850  |      |     |      |      | 855  |      |      |      |      | 860  |      |      |      |      |  |  |
| Leu  | Met  | Leu  | Leu | Asp  | Arg  | Ser  | Gly  | Gln  | Gly  | Lys  | Val  | Tyr  | Pro  | Leu  | Ile  |  |  |
| 865  |      |      |     |      | 870  |      |      |      |      | 875  |      |      |      |      | 880  |  |  |
| Asn  | Arg  | Arg  | Arg | Phe  | Gln  | Gln  | Met  | Asp  | Val  | Leu  | Glu  | Gly  | Leu  | Asn  | Val  |  |  |
|      |      |      |     | 885  |      |      |      |      | 890  |      |      |      |      | 895  |      |  |  |
| Leu  | Val  | Thr  | Ile | Ser  | Gly  | Lys  | Lys  | Asp  | Lys  | Leu  | Arg  | Val  | Tyr  | Tyr  | Leu  |  |  |
|      |      | 900  |     |      |      |      |      | 905  |      |      |      |      | 910  |      |      |  |  |
| Ser  | Trp  | Leu  | Arg | Asn  | Lys  | Ile  | Leu  | His  | Asn  | Asp  | Pro  | Glu  | Val  | Glu  | Lys  |  |  |
|      | 915  |      |     |      |      |      | 920  |      |      |      |      |      | 925  |      |      |  |  |
| Lys  | Gln  | Gly  | Trp | Thr  | Thr  | Val  | Gly  | Asp  | Leu  | Glu  | Gly  | Cys  | Val  | His  | Tyr  |  |  |
|      | 930  |      |     |      |      | 935  |      |      |      |      | 940  |      |      |      |      |  |  |
| Lys  | Val  | Val  | Lys | Tyr  | Glu  | Arg  | Ile  | Lys  | Phe  | Leu  | Val  | Ile  | Ala  | Leu  | Lys  |  |  |
| 945  |      |      |     |      | 950  |      |      |      |      | 955  |      |      |      |      | 960  |  |  |
| Ser  | Ser  | Val  | Glu | Val  | Tyr  | Ala  | Trp  | Ala  | Pro  | Lys  | Pro  | Tyr  | His  | Lys  | Phe  |  |  |
|      |      |      |     | 965  |      |      |      |      | 970  |      |      |      |      | 975  |      |  |  |
| Met  | Ala  | Phe  | Lys | Ser  | Phe  | Gly  | Glu  | Leu  | Val  | His  | Lys  | Pro  | Leu  | Leu  | Val  |  |  |
|      |      | 980  |     |      |      |      | 985  |      |      |      |      |      | 990  |      |      |  |  |
| Asp  | Leu  | Thr  | Val | Glu  | Glu  | Gly  | Gln  | Arg  | Leu  | Lys  | Val  | Ile  | Tyr  | Gly  | Ser  |  |  |
|      | 995  |      |     |      |      | 1000 |      |      |      |      |      | 1005 |      |      |      |  |  |
| Cys  | Ala  | Gly  | Phe | His  | Ala  | Val  | Asp  | Val  | Asp  | Ser  | Gly  | Ser  | Val  | Tyr  | Asp  |  |  |
|      | 1010 |      |     |      |      | 1015 |      |      |      |      | 1020 |      |      |      |      |  |  |
| Ile  | Tyr  | Leu  | Pro | Thr  | His  | Val  | Arg  | Lys  | Asn  | Pro  | His  | Ser  | Met  | Ile  | Gln  |  |  |
| 1025 |      |      |     |      | 1030 |      |      |      |      | 1035 |      |      |      |      | 1040 |  |  |
| Cys  | Ser  | Ile  | Lys | Pro  | His  | Ala  | Ile  | Ile  | Ile  | Leu  | Pro  | Asn  | Thr  | Asp  | Gly  |  |  |
|      |      |      |     | 1045 |      |      |      |      | 1050 |      |      |      |      | 1055 |      |  |  |
| Met  | Glu  | Leu  | Leu | Val  | Cys  | Tyr  | Glu  | Asp  | Glu  | Gly  | Val  | Tyr  | Val  | Asn  | Thr  |  |  |
|      |      | 1060 |     |      |      |      | 1065 |      |      |      |      |      | 1070 |      |      |  |  |
| Tyr  | Gly  | Arg  | Ile | Thr  | Lys  | Asp  | Val  | Val  | Leu  | Gln  | Trp  | Gly  | Glu  | Met  | Pro  |  |  |
|      | 1075 |      |     |      |      | 1080 |      |      |      |      |      | 1085 |      |      |      |  |  |
| Thr  | Ser  | Val  | Ala | Tyr  | Ile  | Arg  | Ser  | Asn  | Gln  | Thr  | Met  | Gly  | Trp  | Gly  | Glu  |  |  |
|      | 1090 |      |     |      |      | 1095 |      |      |      |      | 1100 |      |      |      |      |  |  |
| Lys  | Ala  | Ile  | Glu | Ile  | Arg  | Ser  | Val  | Glu  | Thr  | Gly  | His  | Leu  | Asp  | Gly  | Val  |  |  |
| 1105 |      |      |     |      | 1110 |      |      |      |      | 1115 |      |      |      |      | 1120 |  |  |
| Phe  | Met  | His  | Lys | Arg  | Ala  | Gln  | Arg  | Leu  | Lys  | Phe  | Leu  | Cys  | Glu  | Arg  | Asn  |  |  |
|      |      |      |     | 1125 |      |      |      |      | 1130 |      |      |      |      | 1135 |      |  |  |
| Asp  | Lys  | Val  | Phe | Phe  | Ala  | Ser  | Val  | Arg  | Ser  | Gly  | Gly  | Ser  | Ser  | Gln  | Val  |  |  |
|      |      | 1140 |     |      |      |      |      | 1145 |      |      |      |      | 1150 |      |      |  |  |

Tyr Phe Met Thr Leu Gly Arg Thr Ser Leu Leu Ser Trp  
 1155 1160 1165

<210> 127  
 <211> 541  
 <212> PRT  
 <213> Homo sapiens

<400> 127  
 Met Gly Ser Ser Glu Val Ser Ile Ile Pro Gly Leu Gln Lys Glu Glu  
 1 5 10 15  
 Lys Ala Ala Val Glu Arg Arg Arg Leu His Val Leu Lys Ala Leu Lys  
 20 25 30  
 Lys Leu Arg Ile Glu Ala Asp Glu Ala Pro Val Val Ala Val Leu Gly  
 35 40 45  
 Ser Gly Gly Gly Leu Arg Ala His Ile Ala Cys Leu Gly Val Leu Ser  
 50 55 60  
 Glu Met Lys Glu Gln Gly Leu Leu Asp Ala Val Thr Tyr Leu Ala Gly  
 65 70 75 80  
 Val Ser Gly Ser Thr Trp Ala Ile Ser Ser Leu Tyr Thr Asn Asp Gly  
 85 90 95  
 Asp Met Glu Ala Leu Glu Ala Asp Leu Lys His Arg Phe Thr Arg Gln  
 100 105 110  
 Glu Trp Asp Leu Ala Lys Ser Leu Gln Lys Thr Ile Gln Ala Ala Arg  
 115 120 125  
 Ser Glu Asn Tyr Ser Leu Thr Asp Phe Trp Ala Tyr Met Val Ile Ser  
 130 135 140  
 Lys Gln Thr Arg Glu Leu Pro Glu Ser His Leu Ser Asn Met Lys Lys  
 145 150 155 160  
 Pro Val Glu Glu Gly Thr Leu Pro Tyr Pro Ile Phe Ala Ala Ile Asp  
 165 170 175  
 Asn Asp Leu Gln Pro Ser Trp Gln Glu Ala Arg Ala Pro Glu Thr Trp  
 180 185 190  
 Phe Glu Phe Thr Pro His His Ala Gly Phe Ser Ala Leu Gly Ala Phe  
 195 200 205  
 Val Ser Ile Thr His Phe Gly Ser Lys Phe Lys Lys Gly Arg Leu Val  
 210 215 220  
 Arg Thr His Pro Glu Arg Asp Leu Thr Phe Leu Arg Gly Leu Trp Gly  
 225 230 235 240  
 Ser Ala Leu Gly Asn Thr Glu Val Ile Arg Glu Tyr Ile Phe Asp Gln  
 245 250 255  
 Leu Arg Asn Leu Thr Leu Lys Gly Leu Trp Arg Arg Ala Val Ala Asn  
 260 265 270  
 Ala Lys Ser Ile Gly His Leu Ile Phe Ala Arg Leu Leu Arg Leu Gln  
 275 280 285  
 Glu Ser Ser Gln Gly Glu His Pro Pro Pro Glu Asp Glu Gly Gly Glu  
 290 295 300  
 Pro Glu His Thr Trp Leu Thr Glu Met Leu Glu Asn Trp Thr Arg Thr  
 305 310 315 320  
 Ser Leu Glu Lys Gln Glu Gln Pro His Glu Asp Pro Glu Arg Lys Gly  
 325 330 335  
 Ser Leu Ser Asn Leu Met Asp Phe Val Lys Lys Thr Gly Ile Cys Ala  
 340 345 350  
 Ser Lys Trp Glu Trp Gly Thr Thr His Asn Phe Leu Tyr Lys His Gly  
 355 360 365  
 Gly Ile Arg Asp Lys Ile Met Ser Ser Arg Lys His Leu His Leu Val  
 370 375 380  
 Asp Ala Gly Leu Ala Ile Asn Thr Pro Phe Pro Leu Val Leu Pro Pro  
 385 390 395 400  
 Thr Arg Glu Val His Leu Ile Leu Ser Phe Asp Phe Ser Ala Gly Asp  
 405 410 415

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Phe | Glu | Thr | Ile | Arg | Ala | Thr | Thr | Asp | Tyr | Cys | Arg | Arg | His | Lys |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Ile | Pro | Phe | Pro | Gln | Val | Glu | Glu | Ala | Glu | Leu | Asp | Leu | Trp | Ser | Lys |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Ala | Pro | Ala | Ser | Cys | Tyr | Ile | Leu | Lys | Gly | Glu | Thr | Gly | Pro | Val | Val |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |
| Ile | His | Phe | Pro | Leu | Phe | Asn | Ile | Asp | Ala | Cys | Gly | Gly | Asp | Ile | Glu |
| 465 |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     |     | 480 |
| Ala | Trp | Ser | Asp | Thr | Tyr | Asp | Thr | Phe | Lys | Leu | Ala | Asp | Thr | Tyr | Thr |
|     |     |     | 485 |     |     |     |     | 490 |     |     |     |     |     | 495 |     |
| Leu | Asp | Val | Val | Val | Leu | Leu | Leu | Ala | Leu | Ala | Lys | Lys | Asn | Val | Arg |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |
| Glu | Asn | Lys | Lys | Lys | Ile | Leu | Arg | Glu | Leu | Met | Asn | Val | Ala | Gly | Leu |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |
| Tyr | Tyr | Pro | Lys | Asp | Ser | Ala | Arg | Ser | Cys | Cys | Leu | Ala |     |     |     |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |

<210> 128  
 <211> 411  
 <212> PRT  
 <213> Homo sapiens

|           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <400> 128 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Met       | Gln | Cys | Ser | Trp | Lys | Ala | Val | Leu | Leu | Leu | Ala | Leu | Ala | Ser | Ile |
| 1         |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |
| Ala       | Ile | Gln | Tyr | Thr | Ala | Ile | Arg | Thr | Phe | Thr | Ala | Lys | Ser | Phe | His |
|           |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Thr       | Cys | Pro | Gly | Leu | Ala | Glu | Ala | Gly | Leu | Ala | Glu | Arg | Leu | Cys | Glu |
|           |     | 35  |     |     |     | 40  |     |     |     |     |     | 45  |     |     |     |
| Glu       | Ser | Pro | Thr | Phe | Ala | Tyr | Asn | Leu | Ser | Arg | Lys | Thr | His | Ile | Leu |
|           | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Ile       | Leu | Ala | Thr | Thr | Arg | Ser | Gly | Ser | Ser | Phe | Val | Gly | Gln | Leu | Phe |
| 65        |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |
| Asn       | Gln | His | Leu | Asp | Val | Phe | Tyr | Leu | Phe | Glu | Pro | Leu | Tyr | His | Val |
|           |     |     | 85  |     |     |     |     | 90  |     |     |     |     |     | 95  |     |
| Gln       | Asn | Thr | Leu | Ile | Pro | Arg | Phe | Thr | Gln | Gly | Lys | Ser | Pro | Ala | Asp |
|           |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Arg       | Arg | Val | Met | Leu | Gly | Ala | Ser | Arg | Asp | Leu | Leu | Arg | Ser | Leu | Tyr |
|           |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Asp       | Cys | Asp | Leu | Tyr | Phe | Leu | Glu | Asn | Tyr | Ile | Lys | Pro | Pro | Pro | Val |
|           | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Asn       | His | Thr | Thr | Asp | Arg | Ile | Phe | Arg | Arg | Gly | Ala | Ser | Arg | Val | Leu |
| 145       |     |     |     | 150 |     |     |     |     |     | 155 |     |     |     |     | 160 |
| Cys       | Ser | Arg | Pro | Val | Cys | Asp | Pro | Pro | Gly | Pro | Ala | Asp | Leu | Val | Leu |
|           |     |     | 165 |     |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Glu       | Glu | Gly | Asp | Cys | Val | Arg | Lys | Cys | Gly | Leu | Leu | Asn | Leu | Thr | Val |
|           |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Ala       | Ala | Glu | Ala | Cys | Arg | Glu | Arg | Ser | His | Val | Ala | Ile | Lys | Thr | Val |
|           |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Arg       | Val | Pro | Glu | Val | Asn | Asp | Leu | Arg | Ala | Leu | Val | Glu | Asp | Pro | Arg |
|           | 210 |     |     |     |     | 215 |     |     |     |     |     | 220 |     |     |     |
| Leu       | Asn | Leu | Lys | Val | Ile | Gln | Leu | Val | Arg | Asp | Pro | Arg | Gly | Ile | Leu |
| 225       |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Ala       | Ser | Arg | Ser | Glu | Thr | Phe | Arg | Asp | Thr | Tyr | Arg | Leu | Trp | Arg | Leu |
|           |     |     | 245 |     |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Trp       | Tyr | Gly | Thr | Gly | Arg | Lys | Pro | Tyr | Asn | Leu | Asp | Val | Thr | Gln | Leu |
|           |     |     | 260 |     |     |     |     | 265 |     |     |     |     |     | 270 |     |
| Thr       | Thr | Val | Cys | Glu | Asp | Phe | Ser | Asn | Ser | Val | Ser | Thr | Gly | Leu | Met |
|           |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Arg       | Pro | Pro | Trp | Leu | Lys | Gly | Lys | Tyr | Met | Leu | Val | Arg | Tyr | Glu | Asp |
|           | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |

Leu Ala Arg Asn Pro Met Lys Lys Thr Glu Glu Ile Tyr Gly Phe Leu  
 305 310 315 320  
 Gly Ile Pro Leu Asp Ser His Val Ala Arg Trp Ile Gln Asn Asn Thr  
 325 330 335  
 Arg Gly Asp Pro Thr Leu Gly Lys His Lys Tyr Gly Thr Val Arg Asn  
 340 345 350  
 Ser Ala Ala Thr Ala Glu Lys Trp Arg Phe Arg Leu Ser Tyr Asp Ile  
 355 360 365  
 Val Ala Phe Ala Gln Asn Ala Cys Gln Gln Val Leu Ala Gln Leu Gly  
 370 375 380  
 Tyr Lys Ile Ala Ala Ser Glu Glu Glu Leu Lys Asn Pro Ser Val Ser  
 385 390 395 400  
 Leu Val Glu Glu Arg Asp Phe Arg Pro Phe Ser  
 405 410

<210> 129  
 <211> 1228  
 <212> PRT  
 <213> Homo sapiens

<400> 129  
 Met Lys Gly Ala Arg Leu Phe Val Leu Leu Ser Ser Leu Trp Ser Gly  
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 Gly Ile Gly Leu Asn Asn Ser Lys His Ser Trp Thr Ile Pro Glu Asp  
 20 25 30  
 Gly Asn Ser Gln Lys Thr Met Pro Ser Ala Ser Val Pro Pro Asn Lys  
 35 40 45  
 Ile Gln Ser Leu Gln Ile Leu Pro Thr Thr Arg Val Met Ser Ala Glu  
 50 55 60  
 Ile Ala Thr Thr Pro Glu Ala Arg Thr Ser Glu Asp Ser Leu Leu Lys  
 65 70 75 80  
 Ser Thr Leu Pro Pro Ser Glu Thr Ser Ala Pro Ala Glu Gly Val Arg  
 85 90 95  
 Asn Gln Thr Leu Thr Ser Thr Glu Lys Ala Glu Gly Val Val Lys Leu  
 100 105 110  
 Gln Asn Leu Thr Leu Pro Thr Asn Ala Ser Ile Lys Phe Asn Pro Gly  
 115 120 125  
 Ala Glu Ser Val Val Leu Ser Asn Ser Thr Leu Lys Phe Leu Gln Ser  
 130 135 140  
 Phe Ala Arg Lys Ser Asn Glu Gln Ala Thr Ser Leu Asn Thr Val Gly  
 145 150 155 160  
 Gly Thr Gly Gly Ile Gly Gly Val Gly Gly Thr Gly Gly Val Gly Asn  
 165 170 175  
 Arg Ala Pro Arg Glu Thr Tyr Leu Ser Arg Gly Asp Ser Ser Ser  
 180 185 190  
 Gln Arg Thr Asp Tyr Gln Lys Ser Asn Phe Glu Thr Thr Arg Gly Lys  
 195 200 205  
 Asn Trp Cys Ala Tyr Val His Thr Arg Leu Ser Pro Thr Val Thr Leu  
 210 215 220  
 Asp Asn Gln Val Thr Tyr Val Pro Gly Gly Lys Gly Pro Cys Gly Trp  
 225 230 235 240  
 Thr Gly Gly Ser Cys Pro Gln Arg Ser Gln Lys Ile Ser Asn Pro Val  
 245 250 255  
 Tyr Arg Met Gln His Lys Ile Val Thr Ser Leu Asp Trp Arg Cys Cys  
 260 265 270  
 Pro Gly Tyr Ser Gly Pro Lys Cys Gln Leu Arg Ala Gln Glu Gln Gln  
 275 280 285  
 Ser Leu Ile His Thr Asn Gln Ala Glu Ser His Thr Ala Val Gly Arg  
 290 295 300  
 Gly Val Ala Glu Gln Gln Gln Gln Gly Cys Gly Asp Pro Glu Val  
 305 310 315 320

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Gln | Lys | Met | Thr | Asp | Gln | Val | Asn | Tyr | Gln | Ala | Met | Lys | Leu | Thr |  |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |  |
| Leu | Leu | Gln | Lys | Lys | Ile | Asp | Asn | Ile | Ser | Leu | Thr | Val | Asn | Asp | Val |  |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |  |
| Arg | Asn | Thr | Tyr | Ser | Ser | Leu | Glu | Gly | Lys | Val | Ser | Glu | Asp | Lys | Ser |  |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |  |
| Arg | Glu | Phe | Gln | Ser | Leu | Leu | Lys | Gly | Leu | Lys | Ser | Lys | Ser | Ile | Asn |  |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |  |
| Val | Leu | Ile | Arg | Asp | Ile | Val | Arg | Glu | Gln | Phe | Lys | Ile | Phe | Gln | Asn |  |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |  |
| Asp | Met | Gln | Glu | Thr | Val | Ala | Gln | Leu | Phe | Lys | Thr | Val | Ser | Ser | Leu |  |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |  |
| Ser | Glu | Asp | Leu | Glu | Ser | Thr | Arg | Gln | Ile | Ile | Gln | Lys | Val | Asn | Glu |  |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |  |
| Ser | Val | Val | Ser | Ile | Ala | Ala | Gln | Gln | Lys | Phe | Val | Leu | Val | Gln | Glu |  |
|     |     |     | 435 |     |     |     | 440 |     |     |     |     | 445 |     |     |     |  |
| Asn | Arg | Pro | Thr | Leu | Thr | Asp | Ile | Val | Glu | Leu | Arg | Asn | His | Ile | Val |  |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |  |
| Asn | Val | Arg | Gln | Glu | Met | Thr | Leu | Thr | Cys | Glu | Lys | Pro | Ile | Lys | Glu |  |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |  |
| Leu | Glu | Val | Lys | Gln | Thr | His | Leu | Glu | Gly | Ala | Leu | Glu | Gln | Glu | His |  |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |  |
| Ser | Arg | Ser | Ile | Leu | Tyr | Tyr | Glu | Ser | Leu | Asn | Lys | Thr | Leu | Ser | Lys |  |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |  |
| Leu | Lys | Glu | Val | His | Glu | Gln | Leu | Leu | Ser | Thr | Glu | Gln | Val | Ser | Asp |  |
|     |     |     | 515 |     |     |     | 520 |     |     |     |     | 525 |     |     |     |  |
| Gln | Lys | Asn | Ala | Pro | Ala | Ala | Glu | Ser | Val | Ser | Asn | Asn | Val | Thr | Glu |  |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |  |
| Tyr | Met | Ser | Thr | Leu | His | Glu | Asn | Ile | Lys | Lys | Gln | Ser | Leu | Met | Met |  |
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |  |
| Leu | Gln | Met | Phe | Glu | Asp | Leu | His | Ile | Gln | Glu | Ser | Lys | Ile | Asn | Asn |  |
|     |     |     |     | 565 |     |     |     |     | 570 |     |     |     |     | 575 |     |  |
| Leu | Thr | Val | Ser | Leu | Glu | Met | Glu | Lys | Glu | Ser | Leu | Arg | Gly | Glu | Cys |  |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |  |
| Glu | Asp | Met | Leu | Ser | Lys | Cys | Arg | Asn | Asp | Phe | Lys | Phe | Gln | Leu | Lys |  |
|     |     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |  |
| Asp | Thr | Glu | Glu | Asn | Leu | His | Val | Leu | Asn | Gln | Thr | Leu | Ala | Glu | Val |  |
|     | 610 |     |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |  |
| Leu | Phe | Pro | Met | Asp | Asn | Lys | Met | Asp | Lys | Met | Ser | Glu | Gln | Leu | Asn |  |
| 625 |     |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     | 640 |  |
| Asp | Leu | Thr | Tyr | Asp | Met | Glu | Ile | Leu | Gln | Pro | Leu | Leu | Glu | Gln | Gly |  |
|     |     |     |     | 645 |     |     |     |     | 650 |     |     |     |     | 655 |     |  |
| Ala | Ser | Leu | Arg | Gln | Thr | Met | Thr | Tyr | Glu | Gln | Pro | Lys | Glu | Ala | Ile |  |
|     |     |     | 660 |     |     |     |     | 665 |     |     |     |     | 670 |     |     |  |
| Val | Ile | Arg | Lys | Lys | Ile | Glu | Asn | Leu | Thr | Ser | Ala | Val | Asn | Ser | Leu |  |
|     |     |     | 675 |     |     |     | 680 |     |     |     |     | 685 |     |     |     |  |
| Asn | Phe | Ile | Ile | Lys | Glu | Leu | Thr | Lys | Arg | His | Asn | Leu | Leu | Arg | Asn |  |
|     | 690 |     |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     |  |
| Glu | Val | Gln | Gly | Arg | Asp | Asp | Ala | Leu | Glu | Arg | Arg | Ile | Asn | Glu | Tyr |  |
| 705 |     |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     | 720 |  |
| Ala | Leu | Glu | Met | Glu | Asp | Gly | Leu | Asn | Lys | Thr | Met | Thr | Ile | Ile | Asn |  |
|     |     |     |     | 725 |     |     |     |     | 730 |     |     |     |     | 735 |     |  |
| Asn | Ala | Ile | Asp | Phe | Ile | Gln | Asp | Asn | Tyr | Ala | Leu | Lys | Glu | Thr | Leu |  |
|     |     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |     |     |  |
| Ser | Thr | Ile | Lys | Asp | Asn | Ser | Glu | Ile | His | His | Lys | Cys | Thr | Ser | Asp |  |
|     |     |     | 755 |     |     |     | 760 |     |     |     |     | 765 |     |     |     |  |
| Met | Glu | Thr | Ile | Leu | Thr | Phe | Ile | Pro | Gln | Phe | His | Arg | Leu | Asn | Asp |  |
|     | 770 |     |     |     |     | 775 |     |     |     |     | 780 |     |     |     |     |  |
| Ser | Ile | Gln | Thr | Leu | Val | Asn | Asp | Asn | Gln | Arg | Tyr | Asn | Phe | Val | Leu |  |
| 785 |     |     |     |     | 790 |     |     |     |     | 795 |     |     |     |     | 800 |  |

|      |      |     |      |      |      |      |      |      |      |      |      |      |      |      |      |  |  |
|------|------|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|--|--|
| Gln  | Val  | Ala | Lys  | Thr  | Leu  | Ala  | Gly  | Ile  | Pro  | Arg  | Asp  | Glu  | Lys  | Leu  | Asn  |  |  |
|      |      |     |      | 805  |      |      |      |      | 810  |      |      |      |      | 815  |      |  |  |
| Gln  | Ser  | Asn | Phe  | Gln  | Lys  | Met  | Tyr  | Gln  | Met  | Phe  | Asn  | Glu  | Thr  | Thr  | Ser  |  |  |
|      |      |     | 820  |      |      |      |      | 825  |      |      |      |      | 830  |      |      |  |  |
| Gln  | Val  | Arg | Lys  | Tyr  | Gln  | Gln  | Asn  | Met  | Ser  | His  | Leu  | Glu  | Glu  | Lys  | Leu  |  |  |
|      |      | 835 |      |      |      |      | 840  |      |      |      |      | 845  |      |      |      |  |  |
| Leu  | Leu  | Thr | Thr  | Lys  | Ile  | Ser  | Lys  | Asn  | Phe  | Glu  | Thr  | Arg  | Leu  | Gln  | Asp  |  |  |
|      | 850  |     |      |      |      | 855  |      |      |      |      | 860  |      |      |      |      |  |  |
| Ile  | Glu  | Ser | Lys  | Val  | Thr  | Gln  | Thr  | Leu  | Ile  | Pro  | Tyr  | Tyr  | Ile  | Ser  | Val  |  |  |
| 865  |      |     |      |      | 870  |      |      |      |      | 875  |      |      |      |      | 880  |  |  |
| Lys  | Lys  | Gly | Ser  | Val  | Val  | Thr  | Asn  | Glu  | Arg  | Asp  | Gln  | Ala  | Leu  | Gln  | Leu  |  |  |
|      |      |     |      | 885  |      |      |      |      | 890  |      |      |      |      | 895  |      |  |  |
| Gln  | Val  | Leu | Asn  | Ser  | Arg  | Phe  | Lys  | Ala  | Leu  | Glu  | Ala  | Lys  | Ser  | Ile  | His  |  |  |
|      |      |     | 900  |      |      |      |      | 905  |      |      |      |      | 910  |      |      |  |  |
| Leu  | Ser  | Ile | Asn  | Phe  | Phe  | Ser  | Leu  | Asn  | Lys  | Thr  | Leu  | His  | Glu  | Val  | Leu  |  |  |
|      | 915  |     |      |      |      |      | 920  |      |      |      |      | 925  |      |      |      |  |  |
| Thr  | Met  | Cys | His  | Asn  | Ala  | Ser  | Thr  | Ser  | Val  | Ser  | Glu  | Leu  | Asn  | Ala  | Thr  |  |  |
|      | 930  |     |      |      |      | 935  |      |      |      |      | 940  |      |      |      |      |  |  |
| Ile  | Pro  | Lys | Trp  | Ile  | Lys  | His  | Ser  | Leu  | Pro  | Asp  | Ile  | Gln  | Leu  | Leu  | Gln  |  |  |
| 945  |      |     |      |      | 950  |      |      |      |      | 955  |      |      |      |      | 960  |  |  |
| Lys  | Gly  | Leu | Thr  | Glu  | Phe  | Val  | Glu  | Pro  | Ile  | Ile  | Gln  | Ile  | Lys  | Thr  | Gln  |  |  |
|      |      |     |      | 965  |      |      |      |      | 970  |      |      |      |      | 975  |      |  |  |
| Ala  | Ala  | Leu | Ser  | Asn  | Ser  | Thr  | Cys  | Cys  | Ile  | Asp  | Arg  | Ser  | Leu  | Pro  | Gly  |  |  |
|      |      |     | 980  |      |      |      |      | 985  |      |      |      |      | 990  |      |      |  |  |
| Ser  | Leu  | Ala | Asn  | Val  | Val  | Lys  | Ser  | Gln  | Lys  | Gln  | Val  | Lys  | Ser  | Leu  | Pro  |  |  |
|      | 995  |     |      |      |      |      | 1000 |      |      |      |      | 1005 |      |      |      |  |  |
| Lys  | Lys  | Ile | Asn  | Ala  | Leu  | Lys  | Lys  | Pro  | Thr  | Val  | Asn  | Leu  | Thr  | Thr  | Val  |  |  |
|      | 1010 |     |      |      |      | 1015 |      |      |      |      | 1020 |      |      |      |      |  |  |
| Leu  | Ile  | Gly | Arg  | Thr  | Gln  | Arg  | Asn  | Thr  | Asp  | Asn  | Ile  | Ile  | Tyr  | Pro  | Glu  |  |  |
| 1025 |      |     |      |      | 1030 |      |      |      |      | 1035 |      |      |      |      | 1040 |  |  |
| Glu  | Tyr  | Ser | Ser  | Cys  | Ser  | Arg  | His  | Pro  | Cys  | Gln  | Asn  | Gly  | Gly  | Thr  | Cys  |  |  |
|      |      |     |      | 1045 |      |      |      |      | 1050 |      |      |      |      | 1055 |      |  |  |
| Ile  | Asn  | Gly | Arg  | Thr  | Ser  | Phe  | Thr  | Cys  | Ala  | Cys  | Arg  | His  | Pro  | Phe  | Thr  |  |  |
|      |      |     | 1060 |      |      |      |      | 1065 |      |      |      |      | 1070 |      |      |  |  |
| Gly  | Asp  | Asn | Cys  | Thr  | Ile  | Lys  | Leu  | Val  | Glu  | Glu  | Asn  | Ala  | Leu  | Ala  | Pro  |  |  |
|      | 1075 |     |      |      |      |      | 1080 |      |      |      |      | 1085 |      |      |      |  |  |
| Asp  | Phe  | Ser | Lys  | Gly  | Ser  | Tyr  | Arg  | Tyr  | Ala  | Pro  | Met  | Val  | Ala  | Phe  | Phe  |  |  |
|      | 1090 |     |      |      |      | 1095 |      |      |      |      | 1100 |      |      |      |      |  |  |
| Ala  | Ser  | His | Thr  | Tyr  | Gly  | Met  | Thr  | Ile  | Pro  | Gly  | Pro  | Ile  | Leu  | Phe  | Asn  |  |  |
| 1105 |      |     |      |      | 1110 |      |      |      |      | 1115 |      |      |      |      | 1120 |  |  |
| Asn  | Leu  | Asp | Val  | Asn  | Tyr  | Gly  | Ala  | Ser  | Tyr  | Thr  | Pro  | Arg  | Thr  | Gly  | Lys  |  |  |
|      |      |     |      | 1125 |      |      |      |      | 1130 |      |      |      |      | 1135 |      |  |  |
| Phe  | Arg  | Ile | Pro  | Tyr  | Leu  | Gly  | Val  | Tyr  | Val  | Phe  | Lys  | Tyr  | Thr  | Ile  | Glu  |  |  |
|      |      |     | 1140 |      |      |      |      | 1145 |      |      |      |      | 1150 |      |      |  |  |
| Ser  | Phe  | Ser | Ala  | His  | Ile  | Ser  | Gly  | Phe  | Leu  | Val  | Val  | Asp  | Gly  | Ile  | Asp  |  |  |
|      | 1155 |     |      |      |      |      | 1160 |      |      |      |      | 1165 |      |      |      |  |  |
| Lys  | Leu  | Ala | Phe  | Glu  | Ser  | Glu  | Asn  | Ile  | Asn  | Ser  | Glu  | Ile  | His  | Cys  | Asp  |  |  |
|      | 1170 |     |      |      |      | 1175 |      |      |      |      | 1180 |      |      |      |      |  |  |
| Arg  | Val  | Leu | Thr  | Gly  | Asp  | Ala  | Leu  | Leu  | Glu  | Leu  | Asn  | Tyr  | Gly  | Gln  | Glu  |  |  |
| 1185 |      |     |      |      | 1190 |      |      |      |      | 1195 |      |      |      |      | 1200 |  |  |
| Val  | Trp  | Leu | Arg  | Leu  | Ala  | Lys  | Gly  | Thr  | Ile  | Pro  | Ala  | Lys  | Phe  | Pro  | Pro  |  |  |
|      |      |     |      | 1205 |      |      |      |      | 1210 |      |      |      |      | 1215 |      |  |  |
| Val  | Thr  | Thr | Phe  | Ser  | Gly  | Tyr  | Leu  | Leu  | Tyr  | Arg  | Thr  |      |      |      |      |  |  |
|      |      |     | 1220 |      |      |      |      | 1225 |      |      |      |      |      |      |      |  |  |

<210> 130

<211> 4

<212> PRT

<213> Artificial Sequence

<220>  
<223> adhesive motif

<400> 130  
Arg Gly Asp Ser  
1

<210> 131  
<211> 149  
<212> PRT  
<213> Homo sapiens

<400> 131  
Val Ala Ala Arg Pro Pro Val Ser Arg Met Glu Pro Arg Ala Ala Asp  
1 .5 10 15  
Gly Cys Phe Leu Gly Asp Val Gly Phe Trp Val Glu Arg Thr Pro Val  
20 25 30  
His Glu Ala Ala Gln Arg Gly Glu Ser Leu Gln Leu Gln Gln Leu Ile  
35 40 45  
Glu Ser Gly Ala Cys Val Asn Gln Val Thr Val Asp Ser Ile Thr Pro  
50 55 60  
Leu His Ala Ala Ser Leu Gln Gly Gln Ala Arg Cys Val Gln Leu Leu  
65 70 75 80  
Leu Ala Ala Gly Ala Gln Val Asp Ala Arg Asn Ile Asp Gly Ser Thr  
85 90 95  
Pro Leu Cys Asp Ala Cys Ala Ser Gly Ser Ile Glu Cys Val Lys Leu  
100 105 110  
Leu Leu Ser Tyr Gly Ala Lys Val Asn Pro Pro Leu Tyr Thr Ala Ser  
115 120 125  
Pro Leu His Glu Ala Ser Phe Pro Arg Leu Leu Ser Thr Leu Ala Ser  
130 135 140  
Thr Pro Trp Ile Asn  
145

<210> 132  
<211> 206  
<212> PRT  
<213> Homo sapiens

<400> 132  
Met Ala Ala Asn Lys Pro Lys Gly Gln Asn Ser Leu Ala Leu His Lys  
1 5 10 15  
Val Ile Met Val Gly Ser Gly Gly Val Gly Lys Ser Ala Leu Thr Leu  
20 25 30  
Gln Phe Met Tyr Asp Glu Phe Val Glu Asp Tyr Glu Pro Thr Lys Ala  
35 40 45  
Asp Ser Tyr Arg Lys Lys Val Val Leu Asp Gly Glu Glu Val Gln Ile  
50 55 60  
Asp Ile Leu Asp Thr Ala Gly Gln Glu Asp Tyr Ala Ala Ile Arg Asp  
65 70 75 80  
Asn Tyr Phe Arg Ser Gly Glu Gly Phe Leu Cys Val Phe Ser Ile Thr  
85 90 95  
Glu Met Glu Ser Phe Ala Ala Thr Ala Asp Phe Arg Glu Gln Ile Leu  
100 105 110  
Arg Val Lys Glu Asp Glu Asn Val Pro Phe Leu Leu Val Gly Asn Lys  
115 120 125  
Ser Asp Leu Glu Asp Lys Arg Gln Val Ser Val Glu Glu Ala Lys Asn  
130 135 140  
Arg Ala Glu Gln Trp Asn Val Asn Tyr Val Glu Thr Ser Ala Lys Thr  
145 150 155 160

Arg Ala Asn Val Asp Lys Val Phe Phe Asp Leu Met Arg Glu Ile Arg  
 165 170 175  
 Ala Arg Lys Met Glu Asp Ser Lys Glu Lys Asn Gly Lys Lys Arg  
 180 185 190  
 Lys Ser Leu Ala Lys Arg Ile Arg Glu Arg Cys Cys Ile Leu  
 195 200 205

<210> 133  
 <211> 431  
 <212> PRT  
 <213> Homo sapiens

<400> 133  
 Met Met Arg Gln Arg Gln Ser His Tyr Cys Ser Val Leu Phe Leu Ser  
 1 5 10 15  
 Val Asn Tyr Leu Gly Gly Thr Phe Pro Gly Asp Ile Cys Ser Glu Glu  
 20 25 30  
 Asn Gln Ile Val Ser Ser Tyr Ala Ser Lys Val Cys Phe Glu Ile Glu  
 35 40 45  
 Glu Asp Tyr Lys Asn Arg Gln Phe Leu Gly Pro Glu Gly Asn Val Asp  
 50 55 60  
 Val Glu Leu Ile Asp Lys Ser Thr Asn Arg Tyr Ser Val Trp Phe Pro  
 65 70 75 80  
 Thr Ala Gly Trp Tyr Leu Trp Ser Ala Thr Gly Leu Gly Phe Leu Val  
 85 90 95  
 Arg Asp Glu Val Thr Val Thr Ile Ala Phe Gly Ser Trp Ser Gln His  
 100 105 110  
 Leu Ala Leu Asp Leu Gln His His Glu Gln Trp Leu Val Gly Gly Pro  
 115 120 125  
 Leu Phe Asp Val Thr Ala Glu Pro Glu Glu Ala Val Ala Glu Ile His  
 130 135 140  
 Leu Pro His Phe Ile Ser Leu Gln Gly Glu Val Asp Val Ser Trp Phe  
 145 150 155 160  
 Leu Val Ala His Phe Lys Asn Glu Gly Met Val Leu Glu His Pro Ala  
 165 170 175  
 Arg Val Glu Pro Phe Tyr Ala Val Leu Glu Ser Pro Ser Phe Ser Leu  
 180 185 190  
 Met Gly Ile Leu Leu Arg Ile Ala Ser Gly Thr Arg Leu Ser Ile Pro  
 195 200 205  
 Ile Thr Ser Asn Thr Leu Ile Tyr Tyr His Pro His Pro Glu Asp Ile  
 210 215 220  
 Lys Phe His Leu Tyr Leu Val Pro Ser Asp Ala Leu Leu Thr Lys Ala  
 225 230 235 240  
 Ile Asp Asp Glu Glu Asp Arg Phe His Gly Val Arg Leu Gln Thr Ser  
 245 250 255  
 Pro Pro Met Glu Pro Leu Asn Phe Gly Ser Ser Tyr Ile Val Ser Asn  
 260 265 270  
 Ser Ala Asn Leu Lys Val Met Pro Lys Glu Leu Lys Leu Ser Tyr Arg  
 275 280 285  
 Ser Pro Gly Glu Ile Gln His Phe Ser Lys Phe Tyr Ala Gly Gln Met  
 290 295 300  
 Lys Glu Pro Ile Gln Leu Glu Ile Thr Glu Lys Arg His Gly Thr Leu  
 305 310 315 320  
 Val Trp Asp Thr Glu Val Lys Pro Val Asp Leu Gln Leu Val Ala Ala  
 325 330 335  
 Ser Ala Pro Pro Phe Ser Gly Ala Ala Phe Val Lys Glu Asn His  
 340 345 350  
 Arg Gln Leu Gln Ala Arg Met Gly Asp Leu Lys Gly Val Leu Asp Asp  
 355 360 365  
 Leu Gln Asp Asn Glu Val Leu Thr Glu Asn Glu Lys Glu Leu Val Glu  
 370 375 380



|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Glu | Lys | Thr | Arg | Gln | Ser | Lys | Asn | Glu | Ala | Leu | Leu | Ser | Met | Val |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Glu | Lys | Lys | Gly | Asp | Leu | Ala | Leu | Asp | Val | Leu | Phe | Arg | Ser | Ile | Ser |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Glu | Arg | Asp | Pro | Tyr | Leu | Val | Ser | Tyr | Leu | Arg | Gln | Gln | Asn | Leu |     |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |

<210> 134  
 <211> 672  
 <212> PRT  
 <213> Homo sapiens

|           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <400> 134 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Met       | Gly | Val | Gly | Arg | Leu | Asp | Met | Tyr | Val | Leu | His | Pro | Pro | Ser | Ala |
| 1         |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Gly       | Ala | Glu | Arg | Thr | Leu | Ala | Ser | Val | Cys | Ala | Leu | Leu | Val | Trp | His |
|           |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Pro       | Ala | Gly | Pro | Gly | Glu | Lys | Val | Val | Arg | Val | Leu | Phe | Pro | Gly | Cys |
|           |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Thr       | Pro | Pro | Ala | Cys | Leu | Leu | Asp | Gly | Leu | Val | Arg | Leu | Gln | His | Leu |
|           | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Arg       | Phe | Leu | Arg | Glu | Pro | Val | Val | Thr | Pro | Gln | Asp | Leu | Glu | Gly | Pro |
| 65        |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |
| Gly       | Arg | Ala | Glu | Ser | Lys | Glu | Ser | Val | Gly | Ser | Arg | Asp | Ser | Ser | Lys |
|           |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Arg       | Glu | Gly | Leu | Leu | Ala | Thr | His | Pro | Arg | Pro | Gly | Gln | Glu | Arg | Pro |
|           |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Gly       | Val | Ala | Arg | Lys | Glu | Pro | Ala | Arg | Ala | Glu | Ala | Pro | Arg | Lys | Thr |
|           |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Glu       | Lys | Glu | Ala | Lys | Thr | Pro | Arg | Glu | Leu | Lys | Lys | Asp | Pro | Lys | Pro |
|           | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Ser       | Val | Ser | Arg | Thr | Gln | Pro | Arg | Glu | Val | Arg | Ala | Ala | Ser | Ser |     |
| 145       |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     | 160 |     |
| Val       | Pro | Asn | Leu | Lys | Thr | Asn | Ala | Gln | Ala | Ala | Pro | Lys | Pro | Arg |     |
|           |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |     |
| Lys       | Ala | Pro | Ser | Thr | Ser | His | Ser | Gly | Phe | Pro | Pro | Val | Ala | Asn | Gly |
|           |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Pro       | Arg | Ser | Pro | Pro | Ser | Leu | Arg | Cys | Gly | Glu | Ala | Ser | Pro | Pro | Ser |
|           |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Ala       | Ala | Cys | Gly | Ser | Pro | Ala | Ser | Gln | Leu | Val | Ala | Thr | Pro | Ser | Leu |
|           | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Glu       | Leu | Gly | Pro | Ile | Pro | Ala | Gly | Glu | Glu | Lys | Ala | Leu | Glu | Leu | Pro |
| 225       |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Leu       | Ala | Ala | Ser | Ser | Ile | Pro | Arg | Pro | Arg | Thr | Pro | Ser | Pro | Glu | Ser |
|           |     |     | 245 |     |     |     |     |     | 250 |     |     |     |     | 255 |     |
| His       | Arg | Ser | Pro | Ala | Glu | Gly | Ser | Glu | Arg | Leu | Ser | Leu | Ser | Pro | Leu |
|           |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Arg       | Gly | Gly | Glu | Ala | Gly | Pro | Asp | Ala | Ser | Pro | Thr | Val | Thr | Thr | Pro |
|           |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Thr       | Val | Thr | Thr | Pro | Ser | Leu | Pro | Ala | Glu | Val | Gly | Ser | Pro | His | Ser |
|           | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Thr       | Glu | Val | Asp | Glu | Ser | Leu | Ser | Val | Ser | Phe | Glu | Gln | Val | Leu | Pro |
| 305       |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |
| Pro       | Ser | Ala | Pro | Thr | Ser | Glu | Ala | Gly | Leu | Ser | Leu | Pro | Leu | Arg | Gly |
|           |     |     | 325 |     |     |     |     | 330 |     |     |     |     |     | 335 |     |
| Pro       | Arg | Ala | Arg | Arg | Ser | Ala | Ser | Pro | His | Asp | Val | Asp | Leu | Cys | Leu |
|           |     | 340 |     |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Val       | Ser | Pro | Cys | Glu | Phe | Glu | His | Arg | Lys | Ala | Val | Pro | Met | Ala | Pro |
|           |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Ala       | Pro | Ala | Ser | Pro | Gly | Ser | Ser | Asn | Asp | Ser | Ser | Ala | Arg | Ser | Gln |
|           | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Arg | Ala | Gly | Gly | Leu | Gly | Ala | Glu | Glu | Thr | Pro | Pro | Thr | Ser | Val |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Ser | Glu | Ser | Leu | Pro | Thr | Leu | Ser | Asp | Ser | Asp | Pro | Val | Pro | Leu | Ala |
|     |     |     | 405 |     |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Pro | Gly | Ala | Ala | Asp | Ser | Asp | Glu | Asp | Thr | Glu | Gly | Phe | Gly | Val | Pro |
|     |     | 420 |     |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Arg | His | Asp | Pro | Leu | Pro | Asp | Pro | Leu | Lys | Val | Pro | Pro | Pro | Leu | Pro |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Asp | Pro | Ser | Ser | Ile | Cys | Met | Val | Asp | Pro | Glu | Met | Leu | Pro | Pro | Lys |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |
| Thr | Ala | Arg | Gln | Thr | Glu | Asn | Val | Ser | Arg | Thr | Arg | Lys | Pro | Leu | Ala |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |
| Arg | Pro | Asn | Ser | Arg | Ala | Ala | Ala | Pro | Lys | Ala | Thr | Pro | Val | Ala | Ala |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |
| Ala | Lys | Thr | Lys | Gly | Leu | Ala | Gly | Gly | Asp | Arg | Ala | Ser | Arg | Pro | Leu |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |
| Ser | Ala | Arg | Ser | Glu | Pro | Ser | Glu | Lys | Gly | Gly | Arg | Ala | Pro | Leu | Ser |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |
| Arg | Lys | Ser | Ser | Thr | Pro | Lys | Thr | Ala | Thr | Arg | Gly | Pro | Ser | Gly | Ser |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |
| Ala | Ser | Ser | Arg | Pro | Gly | Val | Ser | Ala | Thr | Pro | Pro | Lys | Ser | Pro | Val |
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |
| Tyr | Leu | Asp | Leu | Ala | Tyr | Leu | Pro | Ser | Gly | Ser | Ser | Ala | His | Leu | Val |
|     |     |     |     | 565 |     |     |     |     | 570 |     |     |     |     | 575 |     |
| Asp | Glu | Glu | Phe | Gln | Arg | Val | Arg | Ala | Leu | Cys | Tyr | Val | Ile | Ser |     |
|     |     |     | 580 |     |     |     | 585 |     |     |     |     | 590 |     |     |     |
| Gly | Gln | Asp | Gln | Arg | Lys | Glu | Glu | Gly | Met | Arg | Ala | Val | Leu | Asp | Ala |
|     |     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |
| Leu | Leu | Ala | Ser | Lys | Gln | His | Trp | Asp | Arg | Asp | Leu | Gln | Val | Thr | Leu |
|     | 610 |     |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |
| Ile | Pro | Thr | Phe | Asp | Ser | Val | Ala | Met | His | Thr | Trp | Tyr | Ala | Glu | Thr |
| 625 |     |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     | 640 |
| His | Ala | Arg | His | Gln | Ala | Leu | Gly | Ile | Thr | Val | Leu | Gly | Ser | Asn | Gly |
|     |     |     |     | 645 |     |     |     |     | 650 |     |     |     |     | 655 |     |
| Met | Val | Ser | Met | Gln | Asp | Asp | Ala | Phe | Pro | Ala | Cys | Lys | Val | Glu | Phe |
|     |     |     | 660 |     |     |     |     | 665 |     |     |     |     | 670 |     |     |

<210> 135  
 <211> 6  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> epitope tag HIS6

<400> 135  
 His His His His His His  
 1 5